

## Logamatic 4321/4322

For users

Read carefully before use

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# 1 Introduction

With your purchase of this Logamatic control unit you have acquired a product that promises you easy control over your heating system. It offers you optimum heating convenience and minimum energy consumption.

The control unit enables you to operate your heating system to be able to combine your economical and ecological aspirations. Of course, your personal comfort is always priority.

The control unit, which is regulated by the MEC2 programming unit, is set up in the factory for immediate use. Naturally, you or your heating contractor can modify these default settings and adapt them to your individual requirements.

The MEC2 programming unit is the central control unit.

Some functions which you may need are located behind a flap. The keys behind this flap enable you to make various adjustments.

**The control concept is:  
"Push and turn"**

**"This control unit speaks your language."**

Your heating system offers a wealth of other useful functions. Some examples of these are:

- Automatic summer/winter time adjustment
- Party/pause function
- Holiday function
- DHW heating at the touch of a button

## 2 What you should know about your heating system

### **Why should you become more familiar with your heating system?**

Modern heating systems offer you many functions for saving energy without sacrificing comfort. Getting to know this heating technology may appear daunting at first, but after a short while you will recognise the advantages you can gain from a heating system that is set up to meet your personal requirements. The more you are aware of the options offered by your heating system, the greater the benefit you will be able to draw from it.

### **How does your heating system work?**

Your heating system comprises the boiler with burner, the heating control unit, the pipework and the radiators. A DHW cylinder or an instantaneous water heater heats the water required for shower, bath or washing your hands. Subject to the way your heating system has been installed, it can operate either purely as a central heating system or together with a DHW cylinder. The important thing is that the various components match each other. The burner burns fuel (e.g. gas or oil) and heats the water inside the boiler. Using pumps, this hot water is transported through the pipework to the consumers (radiators, underfloor heating system, etc.).

Fig. 1 shows the heating circuit of a pumped central heating system: The burner [2] heats the water inside the boiler [1]. This heating water is transported by the pump [3] through the flow line [4] to the radiators [6]. The heating water flows through the radiators, and in doing so, gives off some of its heat. The heating water flows back to the boiler via the return line [7], where the cycle starts again.

The room temperature can be adjusted to your personal needs using the thermostatic radiator valves [5]. All radiators are supplied with the same flow temperature. The heat transferred to the room depends on the radiator surface and the heating water throughput. Therefore, the heat transfer can be manipulated via the thermostatic radiator valves.

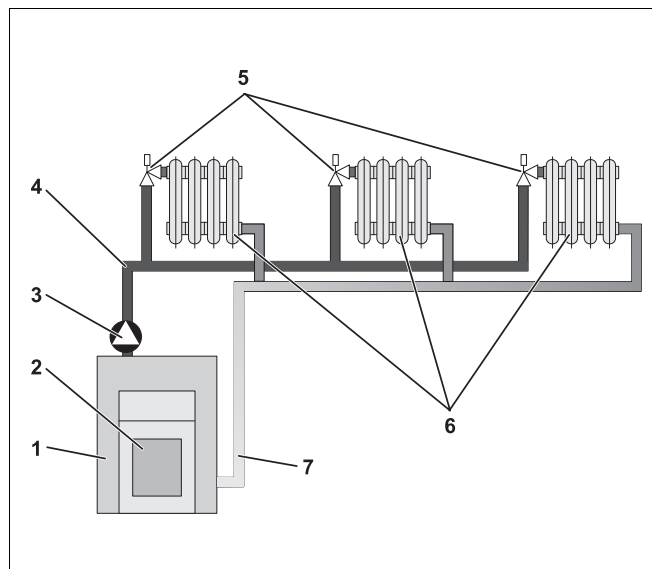


Fig. 1 Pumped central heating design

- 1 Boiler
- 2 Burner
- 3 Pump
- 4 Flow line
- 5 Thermostatic radiator valves
- 6 Radiators
- 7 Return line

### What determines the heat demand of a room?

The heat demand of a room largely depends on the following factors:

- Outside temperature
- Required room temperature
- Type of construction/insulation of the building
- Wind chill factor
- Solar radiant energy
- Internal heat sources (open fireplace, occupants, lamps, etc.)
- Closed or open windows

Take these factors into consideration to achieve a comfortable room temperature.

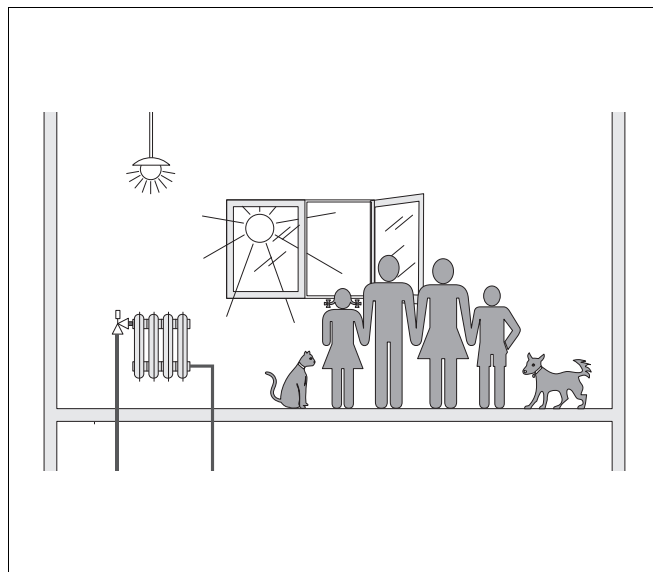


Fig. 2 Influences on the room climate

### Why do you need a heating control unit?

The heating control unit ensures convenient heat and economical consumption of fuel and electrical energy. It starts the heat source (boiler and burner) and pumps, if warm rooms or DHW are required. In doing so, it utilises the components of your heating system at the correct time.

Also, your heating system records different variables that influence the room temperature and compensates for these.

### What does the control unit calculate?

Advanced control units calculate the temperature required within the boiler (the so-called flow temperature) subject to the outside temperature. The relationship between the outside temperature and the flow temperature is described as the heating curve. The lower the outside temperature, the higher the flow temperature must be.

The control unit can operate in three control modes:

- Weather-compensated control
- Room temperature-dependent control
- Weather-compensated control with room temperature hook-up

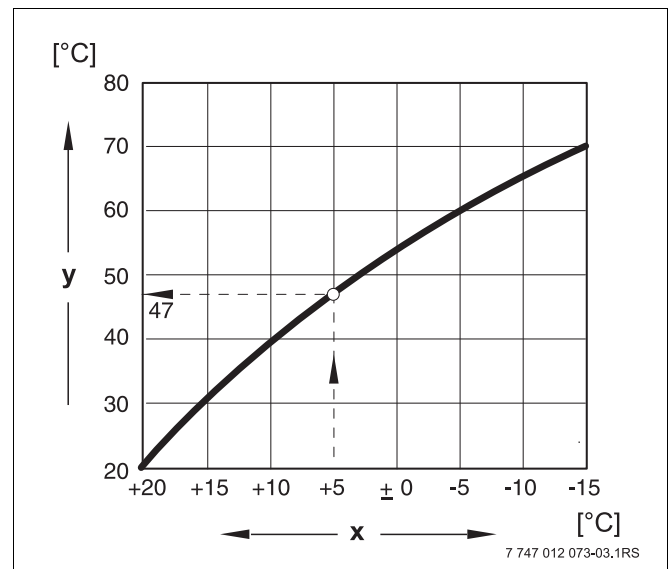


Fig. 3 Heating circuit curve (example)

**x** Outdoor temperature

**y** Flow temperature

### Weather-compensated control

With weather-compensated control, only the outside temperature captured by the outside temperature sensor is decisive for the flow temperature level. Room temperature fluctuations through solar radiant energy, occupants, open fireplaces or similar external heat sources are then ignored.

If you utilise this type of control, adjust the thermostatic radiator valves so that the required room temperature is achieved in the different rooms.

### Room temperature-dependent control

Another possible heating control method is room temperature-dependent control. The control unit calculates the flow temperature based on the set and actual room temperature.

To be able to utilise room temperature-dependent control, you need a room that is representative of your whole home. All factors influencing the temperature in this "reference room" – where the programming unit is located – will also apply to all other rooms. Not every home has a room that meets these requirements. Pure room temperature-dependent control has, in such cases, certain limitations.

Should you, for example, open a window in the room where the room temperature is measured, the control unit will "think" that you have opened the windows in every room in your house and will begin to heat vigorously.

Or the reverse might apply: You measure the temperature in a south-facing room with different heat sources (solar or other heat sources, e.g. an open fireplace). Now the control unit "thinks" that it is as hot in every room as in the reference room; consequently the boiler output will be severely reduced so that, for example, the north-facing rooms will become too cold.

With this kind of control you will need to keep all thermostatic radiator valves in the reference room fully open.

### Weather-compensated control with room temperature hook-up

Weather-compensated control with room temperature hook-up combines the advantages of the other two control modes. The required flow temperature, which is mainly subject to the outside temperature, can be adjusted by the room temperature only to a limited degree. This achieves improved maintenance of the room temperature within the room containing the programming unit, without fully ignoring the other rooms.

With this kind of control you will also need to keep all radiator valves in the reference room fully open.

### Why do the thermostatic radiator valves have to stay fully open?

If, for example, you want to reduce the room temperature in the reference room, and you therefore close the valve, the flow rate through the radiator is reduced and, therefore, less heat is transferred to the room. This reduces the room temperature. The control unit will endeavour to counteract the drop in room temperature by raising the flow temperature. However, raising the flow temperature does not raise the room temperature, as the thermostatic valve continues to limit the room temperature.

An excessive flow temperature results in unnecessary heat losses in boiler and pipework. At the same time, the temperature in all rooms without thermostatic valves increases due to the higher boiler water temperature.



### Why do I need a time switch?

Advanced heating systems are equipped with a time switch to save energy. With a time switch you can set up an automatic changeover between two different room temperatures, subject to time. This enables you to set a reduced room temperature at night, or other times when a reduced temperature is sufficient, whilst operating your heating system with the standard room temperature during the day.

You have four options for reducing the room temperature via the control unit. Upon request, your heating contractor will select and set up one of these options:

- Total shutdown (no room temperature regulation)
- Reduced room temperature (a reduced room temperature will be regulated)
- Change between total shutdown and reduced heating subject to room temperature
- Change between total shutdown and reduced heating subject to outside temperature

With **total shutdown** of the heating system, no pumps or other system components are controlled. Heating only recommences if the heating system is subject to a risk of frost.

**Heating with reduced room temperature** (night mode) only differs from standard heating mode (day mode) through a lower flow temperature.

When **changing from total shutdown to reduced heating**, total shutdown is activated subject to **room temperature** when the actual room temperature exceeds the set room temperature. This function is only possible if a room temperature is being monitored.

When **changing from total shutdown to reduced heating**, total shutdown is activated subject to **outside temperature** when the actual outside temperature exceeds the set outside temperature.

### What are heating circuits?

A heating circuit describes the circuit taken by the heating water from the boiler via the radiators and back again (→ Fig. 1, page 6). A simple heating circuit comprises a heat source, a flow line, a radiator and a return line. A pump installed in the flow line circulates the heating water.

Several heating circuits may be connected to one boiler, for example, one heating circuit for supplying radiators and a further circuit for supplying an underfloor heating system. In this case, the radiators are supplied at a higher flow temperature than the underfloor heating system.

The supply of different flow temperatures to different heating circuits can be achieved by e.g. installing a three-way valve between the boiler and the underfloor heating circuit.

Using an additional temperature sensor in the flow of the heating circuit to be supplied, sufficient cold return water is mixed via a three-way valve into the hot flow water, to achieve the required lower temperature. It is important to note that heating circuits with three-way valves require an additional pump. This pump enables the second heating circuit to be operated independently of the first heating circuit.

### 3 Tips on energy-efficient heating

Here are a few tips on how to heat economically, without sacrificing convenience:

- Only heat if you need warmth. Utilise the preset heating programs (standard programs) in the control unit, or those that have been tailored to your individual requirements.
- Air rooms correctly during the heating season: Open windows three to four times a day for approximately 5 minutes. Having the window slightly open all the time does not provide fresh air changes and wastes valuable energy.
- Close the thermostatic valves whilst ventilating.
- Windows and doors are places where a lot of heat is lost. Therefore, check whether the doors and windows are correctly sealed. Shut your roller shutters (if installed) at night.
- Never position large objects such as a sofa or desk immediately in front of radiators (maintain a clearance of at least 50 cm). Otherwise, the heated air cannot circulate and heat the room adequately.
- In rooms you occupy during the day, you can, for example, set a room temperature of 21 °C, whilst 17 °C may be sufficient at night. To achieve this, use standard heating mode (day mode) and setback mode (night mode) (→ Chapter 6).
- Never overheat rooms; overheated rooms are unhealthy, plus they waste money and energy. If you reduce the day room temperature, for example from 21 °C to 20 °C, you can save approximately six percent of your heating bill.
- Also heat in an energy-conscious manner in spring and autumn, and utilise the summer/winter time adjustment (→ Chapter 7).
- A pleasant ambience not only depends on the room temperature, but also on the relative humidity. The drier a room, the cooler it feels. You can optimise the relative humidity with house plants.
- You can also save money when heating DHW: Only operate the DHW circulation pump via a time switch. Research has shown that it is generally sufficient to run the DHW circulation pump for only three minutes every half hour.
- Arrange with your local heating contractor to service your heating system annually.

## 4 Safety

### 4.1 About these instructions

These operating instructions contain important information for the safe and correct operation of the Logamatic 4321 and 4322 control units.

### 4.2 Correct use

The Logamatic 4321 and 4322 control units are designed to control and monitor heating systems with different types of boiler in multi-occupancy dwellings, residential complexes and buildings with medium to large heat demand.

### 4.3 Standards and guidelines/directives



The design and operation of this product conform to European Directives and the supplementary national requirements. Its conformity is demonstrated by the CE designation.

You can view the Declaration of Conformity on the internet at [www.buderus.de/konfo](http://www.buderus.de/konfo) or request a copy from your local Buderus sales office.

### 4.4 Symbol key

Two levels of danger are identified and signalled by the following terms:



**WARNING!**

#### RISK TO LIFE

Identifies possible risks associated with a product that might lead to serious injury or death if appropriate care is not taken.



**CAUTION!**

#### RISK OF INJURY/ SYSTEM DAMAGE

Indicates a potentially dangerous situation which could lead to minor or moderately serious injuries or to damage to property.



#### USER INFORMATION

User tips for the optimum utilisation and adjustment of the appliance plus other useful information.

### 4.5 Please observe these notes

- Only operate the control unit as intended and if it is in perfect working order.
- Let your local heating contractor instruct you thoroughly in the operation of this system.
- Read these operating instructions carefully.
- Only enter or change the operating values detailed in these instructions. Other entries alter the control programs of the heating system and can lead to incorrect system functions.
- Maintenance and repairs as well as troubleshooting should only be carried out by authorised and qualified personnel.



**WARNING!**

#### RISK TO LIFE

from electric shock.

- Never open the control unit.
- In an emergency, switch off the control unit (e.g. with the heating system emergency stop switch) or isolate the heating system from the mains supply by removing the main fuse.
- Arrange for your local heating contractor to rectify any heating system faults immediately.



**CAUTION!**

#### RISK OF INJURY/ SYSTEM DAMAGE

from operator error.

Operator errors can result in injury and/or damage to property.

- Ensure that children never operate the appliance unsupervised or play with it.
- Ensure that only personnel able to operate the appliance correctly have access to it.

**WARNING!****RISK OF SCALDING**

For thermal disinfection, the entire DHW system is set at the factory to heat up to 70 °C (start: Tuesday night at 01:00 h).

- If required (e.g. shift work), your local heating contractor can alter the start time.
- During this time, never open any hot water tap without mixing in cold water if the DHW circuit of your heating system is not equipped with a thermostatic mixer.
- As there is a risk of scalding at temperatures above approximately 60 °C, ask your local heating contractor about the set DHW temperatures.

**CAUTION!****SYSTEM DAMAGE**

from frost.

When the heating system is switched off, it can suffer damage from frost.

- Protect your heating system against frost damage by draining it and the DHW pipework at the lowest possible point.

## 4.6 Cleaning the control unit

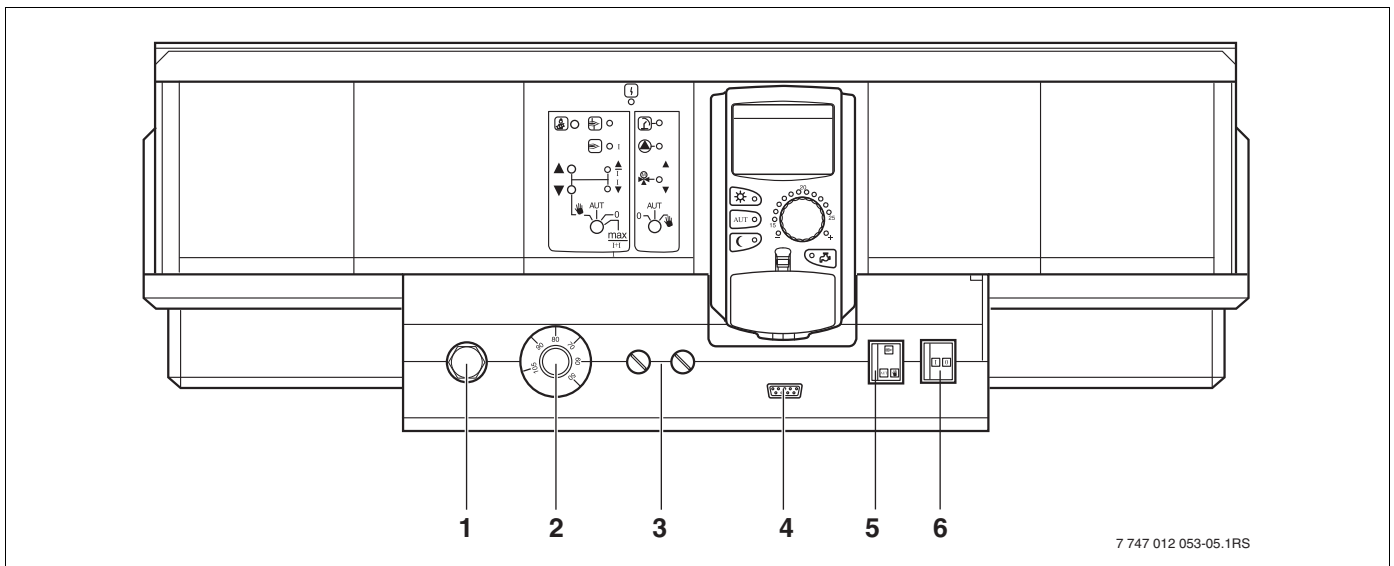
- Only clean the control unit with a damp cloth.

## 4.7 Disposal

- Dispose of the control unit packaging in an environmentally responsible manner.
- The lithium battery in the CM431 module may only be replaced by your local heating contractor.

## 5 Controls and MEC2 programming unit

### 5.1 Control unit – controls



7 747 012 053-05.1RS

Fig. 4 Logamatic 4321 control unit – controls (delivered condition)

- |                                    |  |
|------------------------------------|--|
| 1 High limit safety cut-out        | 4 Connection for external service equipment and MEC2 |
| 2 Boiler water temperature limiter | 5 Burner emergency operation switch                  |
| 3 F1, F2 fuses                     | 6 ON/OFF switch                                      |

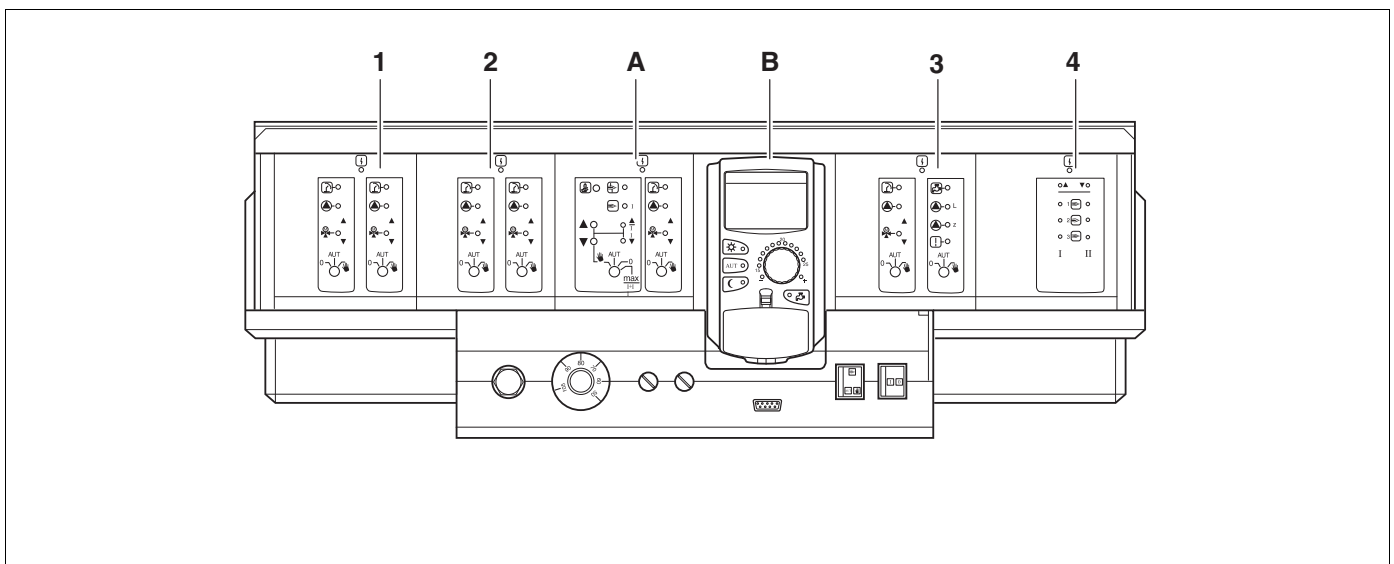


Fig. 5 Fitted modules

- |  |
|--|
| 1 Slot 1: e.g. FM442 – heating circuit 1, heating circuit 2        |
| 2 Slot 2: e.g. FM442 – heating circuit 3, heating circuit 4        |
| A Slot A: ZM434 – boiler circuit, burner                           |
| B Slot B: MEC2 (CM431) – MEC2 programming unit                     |
| 3 Slot 3: e.g. FM441 – heating circuit 5, DHW/DHW circulation pump |
| 4 Slot 4: e.g. FM458 – strategy module (for multi-boiler systems)  |

## 5.2 MEC2 programming unit

The MEC2 programming unit is the central element with which you operate your Logamatic 4321/4322 control unit.

### Display

The display (→ Fig. 6, [4]) indicates functions and operating values, e.g. the actual room temperature.

### Rotary selector

The rotary selector (→ Fig. 6, [5]) is used to set new values and scroll through the menus.

### Keys

You control the functions via the keys, and the relevant indications appear on the display. If you push a key and hold it down, you can change a value using the rotary selector.

The new value will be accepted and stored after you release the key.

You can reach certain functions, such as day room temperature, night room temperature, and possibly the DHW temperature or the automatic heating mode, directly via the corresponding keys (→ Fig. 6, [1] to [3] and [6]).

Behind a flap (→ Fig. 6, [7]) other keys are available for additional settings, e.g. for entering days or setting the time.

The unit automatically returns to the standard display if no entry is detected for some time.

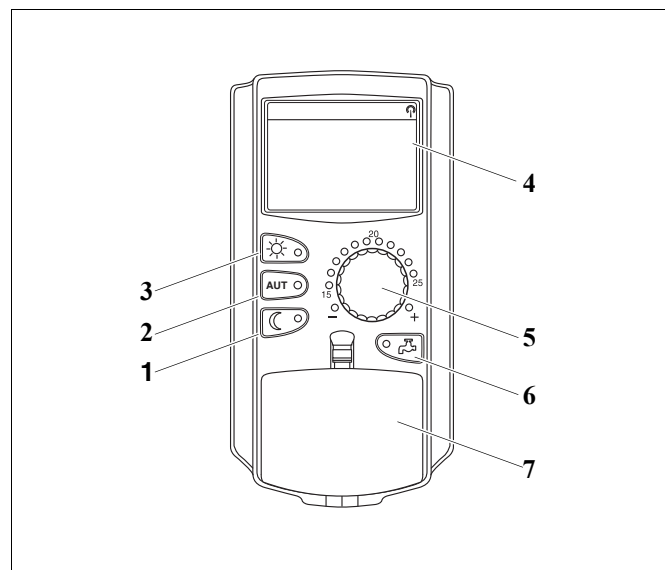
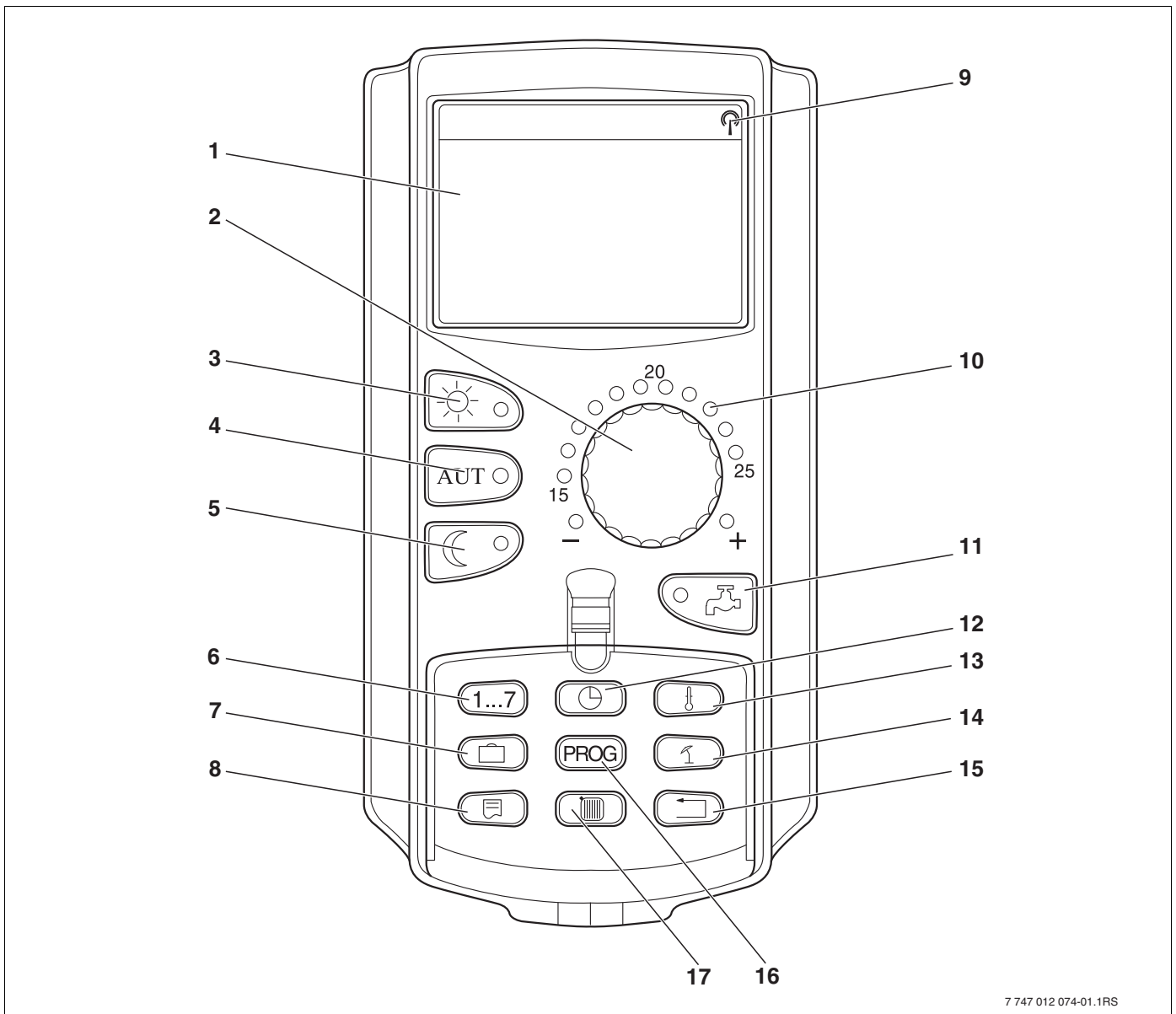


Fig. 6 MEC2 programming unit

- 1 Constant setback mode
- 2 Automatic heating mode acc. to a time switch
- 3 Constant heating mode
- 4 Display
- 5 Rotary selector
- 6 Enter DHW temperature/reheating
- 7 Flap for the keypad of control level 2

## MEC2 programming unit



7 747 012 074-01.1RS

Fig. 7 MEC2 programming unit

- |  |  |
|--|--|
| 1 Display                                      | 9 Radio clock signal (only within Germany) |
| 2 Rotary selector                              | 10 Display for set room temperature        |
| 3 Constant heating mode                        | 11 Enter DHW temperature/reheating         |
| 4 Automatic heating mode acc. to a time switch | 12 Set the time                            |
| 5 Constant setback mode                        | 13 Change temperature values               |
| 6 Enter day of the week                        | 14 Summer/winter time adjustment           |
| 7 Enter holidays                               | 15 Back to the standard display            |
| 8 Select standard display                      | 16 Select a time switch program            |
|  | 17 Select heating circuits/DHW circuit     |

### 5.3 Switching on the control unit

- Check that the control unit ON/OFF switch (→ Fig. 8, [1]) and the switches on the fitted modules (→ Fig. 8, [2]) are set to "I" and "AUT".
- Switch the control unit ON by setting the ON/OFF switch to "I" (→ Fig. 8, [1]).

After approximately two minutes all modules fitted to the control unit are recognised, and the standard display is shown.

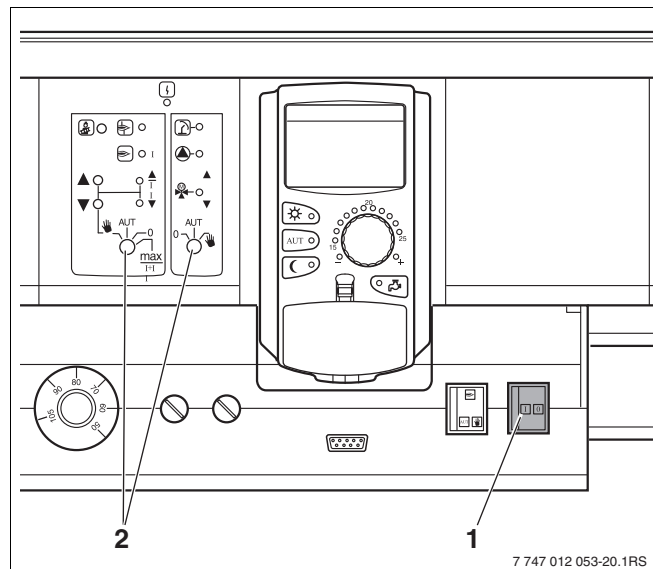


Fig. 8 ON/OFF switch

- 1 ON/OFF switch
- 2 Manual switch

### 5.4 Switching off the control unit

- Switch the control unit OFF by setting the ON/OFF switch to "0" (→ Fig. 8, [1]).
- When there is a risk: Isolate the heating system from the mains supply with the emergency stop upstream of the boiler room, or by removing the main fuse.

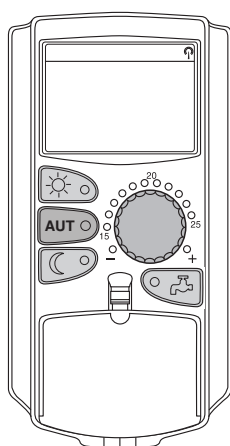


## 6 Standard functions

In this chapter you will find information about the standard functions of the MEC2 programming unit and their use. The standard functions are:

- Selecting the operating mode
- Setting the room temperature
- Setting the DHW temperature
- Heating DHW once

### 6.1 Simple operation



Standard functions are controlled by pressing one of the keys on the "Standard function" keypad or by turning the rotary selector.

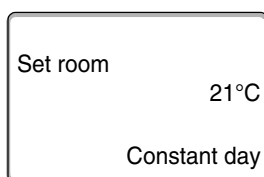
Example: Adjusting the room temperature for day mode



Press "Day mode" to select the standard heating mode (day mode). The LED of the "Day mode" key illuminates; day mode is enabled.



Set the required room temperature by turning the rotary selector. (Requirement: For this, the programming unit flap must be closed.)



The display shows the set value.



### USER INFORMATION

If your heating system is equipped with several heating circuits, first select the correct heating circuit (→ Chapter 7.6). Only then can you select the operating mode and the room temperature.



### USER INFORMATION

The following MEC2 displays only describe the possible displays:

- of module ZM434 (standard equipment level) and
- of the most frequently used modules FM441 and FM442 (accessories).

Subject to the way your heating contractor has configured your system, one or more MEC2 displays may not appear, although the above modules are fitted in your control unit.

Detailed descriptions of MEC2 displays for other modules are included in the corresponding module documentation.

## 6.2 Permanent display

There are two different permanent displays. Either one of the factory-set permanent displays is shown, subject to whether the MEC2 is fitted in a control unit or is installed as a wall mounted unit.

Factory-set permanent display, if the MEC2 is fitted in the control unit.

Boiler temp.	45°C
Outside temp.	21°C

Factory-set permanent display, if the MEC2 is installed as a wall mounted unit.

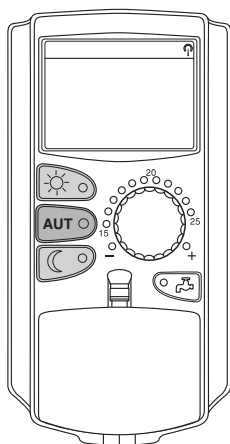
Actual room	19.5°C
Outside temp.	0°C



### USER INFORMATION

The display "Common flow" will only be shown for multi-boiler systems.

## 6.3 Selecting the operating mode



You can operate the MEC2 programming unit in two ways:

- In automatic mode
- In manual mode

### Automatic mode

Generally, homes are heated less at night than during the day. With the MEC2 programming unit you don't need to adjust the thermostatic radiator valves before bedtime or in the morning. The automatic changeover of the MEC2 programming unit does this for you. It changes over between day mode (standard mode) and night mode (setback mode).

The times at which your heating system changes from day to night mode – and vice-versa – are factory-set via standard programs (→ Chapter 7.10). However, you or your heating contractor can modify these settings (→ Chapter 7.12).

### Manual mode

For example, if you want to heat longer in the evening or not quite as early in the morning, you can also select day and night mode manually (→ Chapter 6.3.2). You can also use manual mode to heat on cooler days when the system operates in summer mode.

### 6.3.1 Selecting automatic mode

In automatic mode your heating system will operate with the time switch program, i.e. central and DHW heating at preset times.

Example: Enabling automatic mode

Press "AUT".

The "AUT" LED illuminates; automatic mode is enabled.

In addition, either the "Day mode" or the "Night mode" LED will illuminate. This is subject to the set times for day and night mode.

#### Automatic day and night mode

At fixed times, central heating is provided or the room temperature is set back.

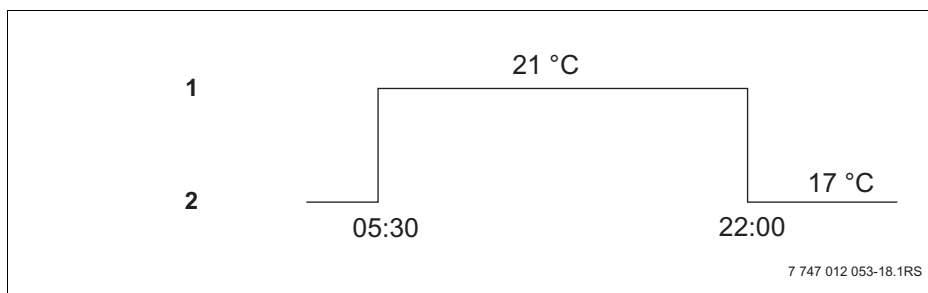
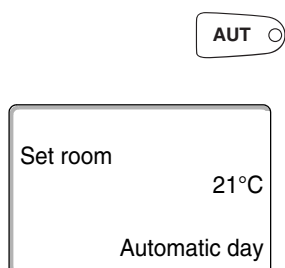


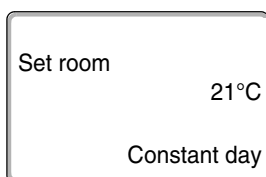
Fig. 9 Changeover from day and night mode at fixed times (example)

- 1 Day mode
- 2 Night mode

### 6.3.2 Selecting manual mode

Press either "Day mode" or "Night mode" to change to manual mode.

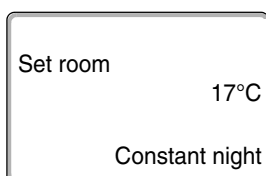
Press "Day mode".



The "Day mode" LED illuminates. Now your heating system is in constant day mode (standard mode).



Press "Night mode".



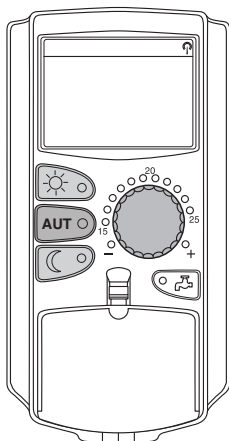
The "Night mode" LED illuminates. Now your heating system is now in constant night mode (setback mode), and operates at a lower room temperature.



#### USER INFORMATION

If you have selected manual mode, other automatic controls will also be switched off, e.g. the summer/winter time adjustment (→ Chapter 7.13).

## 6.4 Setting the room temperature



With the flap closed you can adjust the room temperature with the rotary selector. With the flap open, also press "Day mode" or "Night mode".

With the rotary selector, you can select the room temperature in degree steps between 11 °C (day), or 2 °C (night), and 30 °C. The set temperature is displayed via an LED next to the rotary selector. For temperatures below 15 °C or above 25 °C, the "-" or "+" LED illuminates.

The factory setting for the day room temperature is 21 °C.

The factory setting for the night room temperature is 17 °C.

Any adjustment applies to all heating circuits assigned to the MEC2 programming unit (→ Chapter 7.7).



### USER INFORMATION

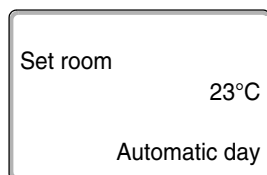
The set room temperature applies to the currently enabled heating mode, i.e. day or night mode. You can recognise the currently enabled heating mode because the green LED illuminates.

#### 6.4.1 For the current operating mode

You are currently in automatic "Day mode" and would like to alter the room temperature.

(Condition: For this, the programming unit flap must be closed.)

Turn the rotary selector to the required day room temperature (here: "23°C").



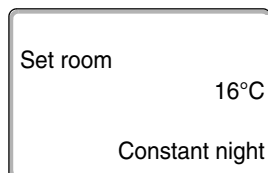
The day room temperature is now adjusted to 23 °C. The selected permanent display will then appear again.

### 6.4.2 For the operating mode not currently enabled

You may also adjust the room temperature for an operating mode that is not currently enabled.

For example, you are currently in automatic day mode and would like to alter the set night temperature.

Hold down "Night mode", and select the required night room temperature with the rotary selector (here: "16°C").



Release the "Night mode" key.

The selected night temperature is now set to 16 °C. The selected permanent display will then appear again.



Press "AUT".

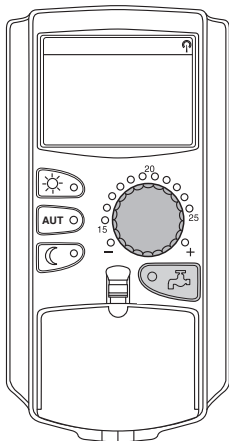
The "AUT" LED illuminates; automatic mode is re-enabled.



#### USER INFORMATION

If you are currently in automatic night mode, and you wish to adjust the day mode, proceed as described above, but instead hold down the "Day mode" key.

## 6.5 Heating DHW



The programming unit also offers you the option of heating DHW in an energy-conscious manner. For this purpose, DHW heating can be selected via a time switch. You can select between the set values for DHW and "OFF", to stop DHW heating.

To save energy, DHW heating will be stopped outside the programmed times, i.e. DHW is not heated in night mode.

DHW heating is factory-set to 60 °C in automatic mode.

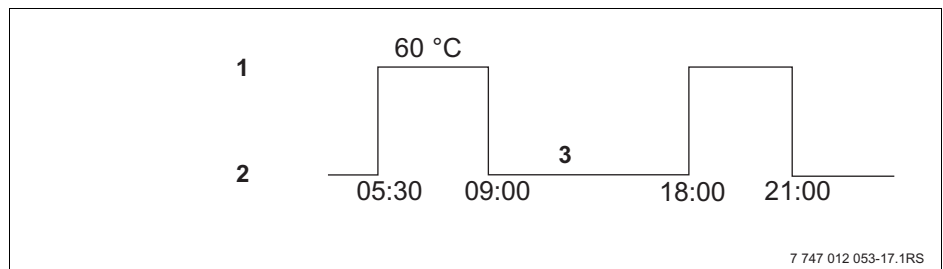


Fig. 10 Example: DHW heating

- 1 Day mode
- 2 Night mode
- 3 OFF

We recommend heating the DHW cylinder once in the morning, before central heating begins, and reheating once in the evening if necessary (see → Fig. 10).



### USER INFORMATION

The DHW temperature will have fallen below the set value if the green "DHW" LED illuminates.



### 6.5.1 Setting the DHW temperature



#### WARNING!

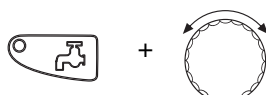
#### RISK OF SCALDING

from hot water.

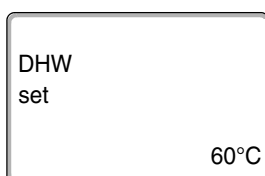
The DHW cylinder temperature is preset to 60 °C. There is a risk of scalding from hot water if your heating contractor has set the DHW temperature higher, or has activated the "Therm. disinfect" function, and the heating water circuit of your heating system is not equipped with a thermostatically controlled mixer. Please note that fittings too can get very hot.

- In such cases, only ever draw off mixed water (hot and cold).

You can change the DHW temperature as follows:



Hold down the "DHW" key, and select the required DHW temperature with the rotary selector.



Release the "DHW" key. The newly selected DHW temperature is saved in approximately 2 seconds. The permanent display will then appear again.



#### USER INFORMATION

For thermal disinfection, the DHW will be heated to at least 60 °C once or twice per week to kill off possible bacteria (e.g. legionella).

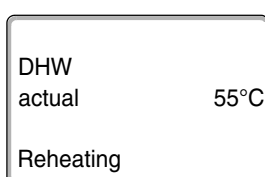
### 6.5.2 Heating DHW once

If the "DHW" LED illuminates, only a limited amount of hot water remains in the cylinder. Should you require a larger amount of DHW, proceed as follows:



Press "DHW".

The LED of the "DHW" key illuminates, and once-only DHW heating begins.



Subject to the size of the DHW cylinder and the boiler output, DHW will be available after approximately 10 to 30 minutes. With instantaneous water heaters, DHW is available almost immediately.

## 7 Extended functions

The extended functions are explained in this chapter. You need the extended functions to be able to change the factory settings of your heating system. You can use the following functions:

- Display the current operating values for your heating system
- Set the time
- Set the date
- Set heating circuits
- Select a heating program
- Set the room temperature for additional heating circuits

The keys for the extended functions are located behind the flap of the MEC2 programming unit.

### 7.1 Keys for extended functions

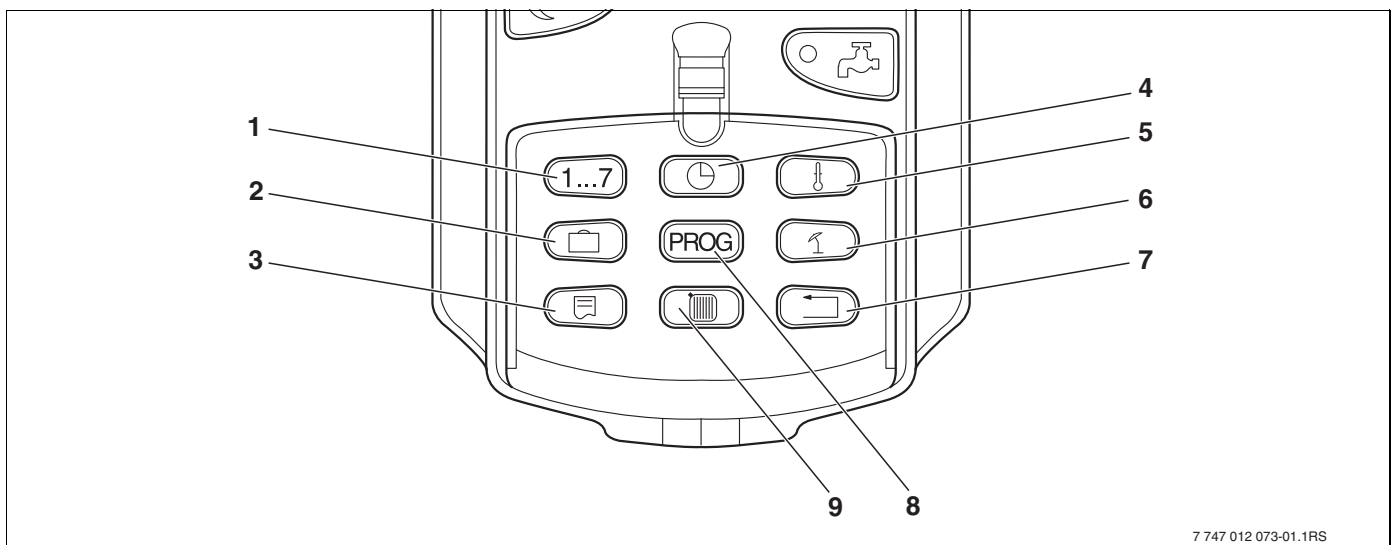


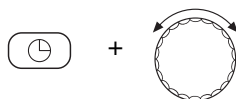
Fig. 11 Keys for the extended functions

- 1 Enter day of the week
- 2 Enter holidays
- 3 Select standard display
- 4 Set the time
- 5 Change temperature values
- 6 Summer/winter time adjustment
- 7 Return to the standard display
- 8 Select a time switch program
- 9 Select heating circuits/DHW circuit

## 7.2 Controlling the extended functions

The extended functions provide access to a further control level. At this level, proceed according to the "Push and turn" principle. The control procedure is always similar:

- Open flap.



Hold the required key down, e.g. the "Time" key, and simultaneously turn the rotary selector.

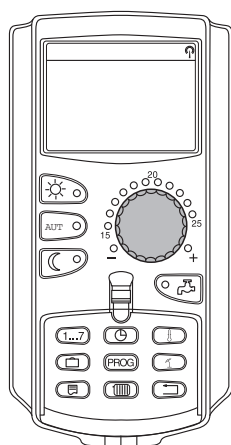
By turning the rotary selector you modify the values that flash on the display.

Release key. Modified values are saved.



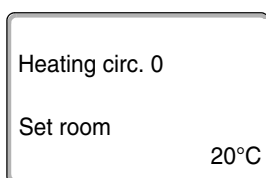
"Back" key = Exit menu.

## 7.3 Displaying operating values



You can display and control the various operating values of the boiler, the selected heating circuit and the system.

Only the operating values of the selected heating circuit, e.g. heating circuit 1 are displayed (→ Chapter 7.6).



- Open flap.

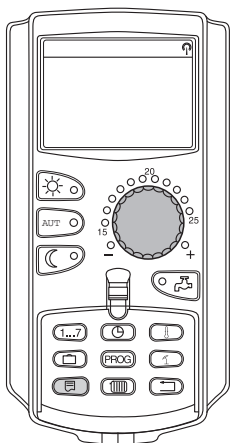
Turn the rotary selector clockwise, without pressing any other key.

Subject to the modules, various of the following operating displays can be called up:

- Burner and Hours run
- Actual room temperature of the heating circuit
- Set heating circuit room temperature
- Heating circuit operating state
- Actual heating circuit flow temperature
- Actual DHW temperature\*
- Set DHW temperature\*
- DHW operating mode\*
- Operating state – DHW circulation pump and cylinder primary pump\*

\* Only if a DHW module has been installed.

## 7.4 Changing the permanent display

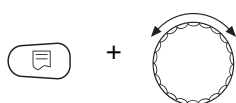


You can determine the permanent display of the programming unit.

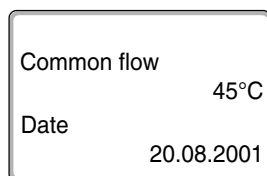
The following permanent displays are available:

- Boiler temp. or Common flow (if MEC2 is wall mounted)
- Outside temp.
- DHW\*
- Time
- Date

*\* Only if a DHW module has been installed.*



Hold the "Display" key down, and select the required permanent display with the rotary selector (here: "Date").



Release the "Display" key. The selected permanent display has now been saved.

## 7.5 Setting the date and time



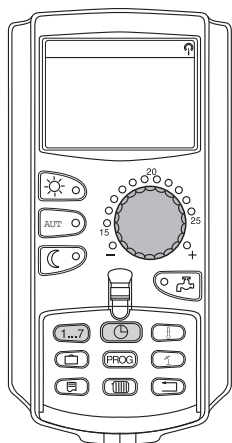
### USER INFORMATION

Date and time are preset at the factory. This function is backed up by battery power independent of the mains power supply.




### USER INFORMATION

We recommend leaving the radio clock receiver disabled outside Germany to prevent the reception of false signals (incorrect time setting).



The MEC2 contains a radio receiver that, under normal reception conditions, constantly monitors and corrects the control unit time switch.

**When using the MEC2 programming unit, the reception of the radio clock signal depends on location and position.**

Reception of the radio clock signal is indicated by symbol  on the display.

Generally, reception is possible within a radius of 1500 kilometers around Frankfurt/Main [Germany].

In case of reception problems, please observe the following:

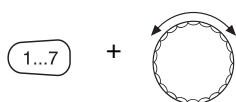
- The radio reception is weaker in rooms surrounded by steel-reinforced walls, in cellars, high-rise buildings etc.
- The distance from sources of interference, such as computer monitors and TV sets, should be at least 1.5 m.
- The radio reception tends to be better at night than during the day.

You can manually adjust the date and time on the MEC2, if the radio clock signal is not available in your area.



### USER INFORMATION

Well screened boiler rooms may impede the reception of the radio clock signal. If you have only an impaired radio clock signal reception or none at all, the factory setting for automatic summer/winter time adjustment according to calendar should be retained.



Set date

20.08.2001

Monday



### Setting the date

Hold "Weekday" down, and select the required date with the rotary selector (here: "20").

The name of the day automatically changes (here: "Monday") if you set the date for the day using the rotary selector (here: "20").

Release "Weekday" to save your input.

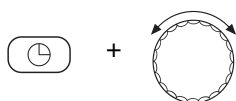
Press "Weekday" again to enter the month.

Press "Weekday" again to enter the year.

The item flashing can be modified with the rotary selector.

### Setting the time

Hold down "Time", and select the required time with the rotary selector.



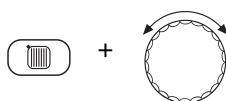
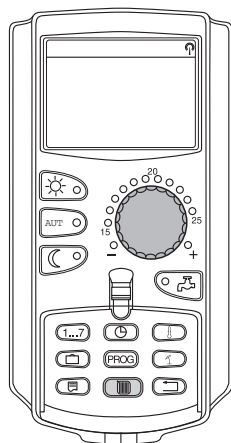
Set time

15:52:58

The time is set in one-minute steps.

Release "Time" to save your input.

## 7.6 Selecting a heating circuit



Heat. circ. sel.

Heating circ. 2

Your heating system may be equipped with several heating circuits. If you want to change a setting, e.g. the heating program, first select the heating circuit whose setting you want to change.

Subject to the equipment level of your heating system, the following heating circuits can be selected:

- MEC2 heating circuits (all heating circuits assigned to the MEC2, → Chapter 7.8)
- Heating circuit 1 – 8
- DHW
- DHW circulation

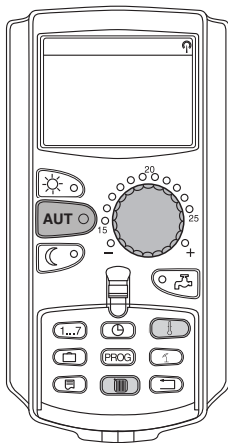
- Open flap.

Hold down the "Heating circuit" key, and select the required heating circuit with the rotary selector (here: "Heating circ. 2").

Release the "Heating circuit" key. The displayed heating circuit is now selected.

As soon as the heating circuit has been selected, the display returns to the permanent display.

## 7.7 Adjusting the room temperature for another heating circuit



Your heating system may be equipped with several heating circuits. If you want to change the room temperature for a different heating circuit than the one last selected, first select the required heating circuit.

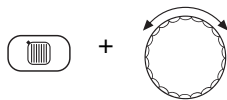
Subject to the equipment level of your heating system, the following heating circuits can be selected:

- MEC2 heating circuits (all heating circuits assigned to the MEC2, → Chapter 7.8)
- Heating circuit 1 – 8

If several heating circuits are assigned to the MEC2, the temperature for these heating circuits can only be adjusted for all. Otherwise a fault message "Setting Not possible. MEC heat. circ. select" will appear. In such cases select "MEC heat. circ.".

- Open flap.

Hold down the "Heating circuit" key, and select the required heating circuit with the rotary selector (here: "Heating circ. 2").



Heat. circ. sel.

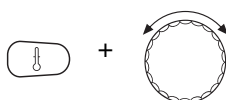
Heating circ. 2

Release the "Heating circuit" key. The displayed heating circuit is now selected.

Actual room 19.5°C  
Outside temp. 0°C

As soon as the heating circuit has been selected, the display returns to the permanent display.



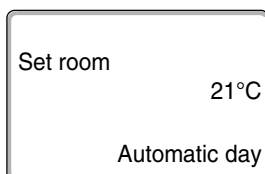


Press and hold down "Temperature". First, the heating circuit whose temperature you want to adjust is displayed. After approximately 2 seconds, the display will show the currently selected temperature and operating mode.

Adjust the temperature with the rotary selector (here: "21°C") for the heating circuit.

Release the key to save your input.

The day room temperature is now adjusted to 21 °C. The selected permanent display will then appear again.



#### USER INFORMATION

If you want to adjust the temperature for an operating mode that is not the current mode, first select the corresponding operating mode (e.g. with the "Night mode" key). After modifying the temperature, reset the operating mode to the previous setting.



#### USER INFORMATION

For heating circuits with individual remote control units (e.g. BFU), you can adjust the room temperature only via this remote control (→ see instructions for the relevant remote control unit).

## 7.8 Heating circuits with MEC2 programming unit

During installation, your heating contractor will determine which heating circuits are to be controlled by the MEC2 programming unit. These heating circuits will be designated "MEC heat. circ.".

### MEC heat. circ.

The following adjustments made at the MEC2 apply all to "MEC heat. circ." simultaneously:

- Setting the room temperature
- Setting the summer/winter time adjustment
- Selecting the operating mode
- Setting the holiday function
- Setting the party or pause function

Setting  
Not possible  
MEC heat. circ.  
select

If you have selected an individual heating circuit that is assigned to the MEC2, and you want to make one of the above adjustments, the fault message "Setting Not possible MEC heat. circ. select" will appear.

Select "MEC heat. circ." to program these settings (→ Chapter 7.6).

### Individual heating circuits

The following adjustments can only be implemented for each individual heating circuit separately:

- Selecting the standard program
- Modifying the standard program by moving switching points
- Inserting or deleting switching points
- Deleting or connecting heating phases
- Creating a heating, DHW or DHW circulation pump program

Time switch  
Not possible  
Single heat circ  
select

If you have selected "MEC heat. circ.", and you want to make one of the above adjustments, the fault message "Time switch not possible Single heat circ select" will appear.

Enter these settings for each heating circuit separately (→ Chapter 7.6).

## 7.9 Selecting and modifying a heating program

### 7.9.1 What is a heating program?

A heating program provides automatic changeover between operating modes (day and night mode) at fixed times. This automatic changeover is effected via a time switch.

Before you utilise this option, consider the following:

- At what time in the morning should your home be warm? Is this time also subject to the day of the week?
- Are there days when you don't want to heat?
- From what time in the evenings do you no longer need to heat? This may also depend on the day of the week.

The length of time your heating system takes to heat up individual rooms may vary. This will be subject to the outside temperature, the building insulation and the drop in room temperature.

The "Optimisation" function of the programming unit calculates the various heat-up times. Ask your heating contractor whether this function has been enabled. If so, all you need to do is enter the times at which your home should be warm.

With the programming unit, Buderus offers eight different, pre-programmed heating programs as standard programs.

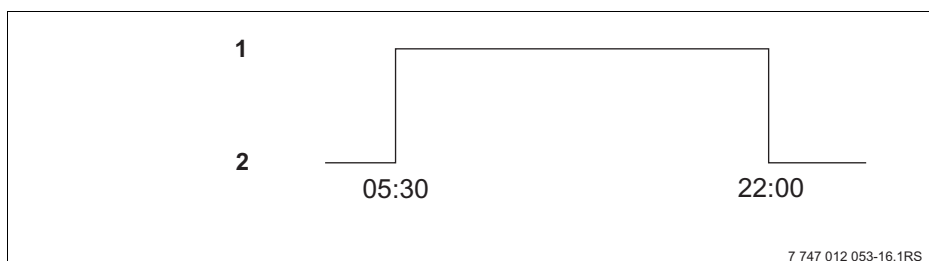


Fig. 12 Example for a standard program (here: "Family program" from Monday to Thursday)

- 1 Day mode
- 2 Night mode



#### USER INFORMATION

After commissioning, check whether the selected heating program suits your lifestyle. If not, several options are available for matching the heating program to your individual requirements.

### 7.9.2 Time switch program for DHW

You may enter your own heating program for DHW heating. This saves you energy.

Determine the time points so that DHW is only available when one heating circuit is in standard heating mode (day mode). DHW will then be heated 30 minutes prior to day mode starting in the first (by time) heating circuit, to ensure it is available at the required time.

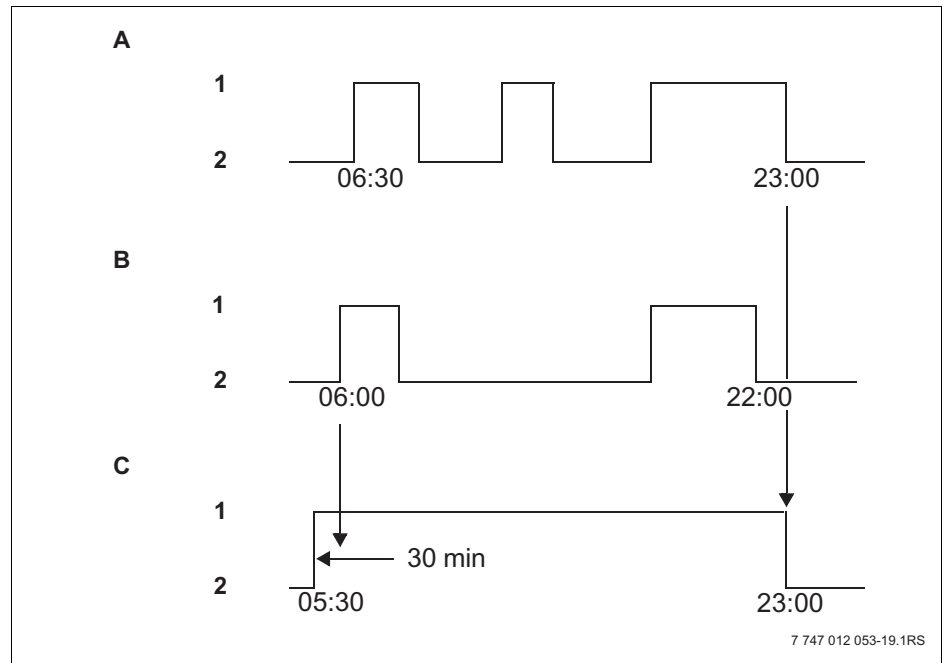


Fig. 13 DHW heating begins 30 minutes before day mode of the first heating circuit, and ends with the beginning of night mode of the last heating circuit

- A Heating circ. 1
- B Heating circ. 2
- C DHW
- 1 Day mode
- 2 Night mode

If you require additional hot water, you may, at short notice, heat DHW with the "DHW heating once" function (→ Chapter 6.5.2).



#### USER INFORMATION

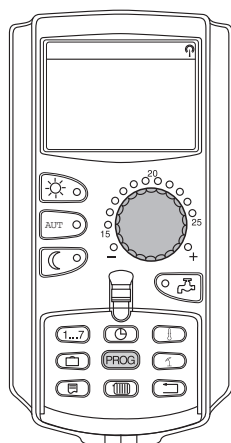
DHW will not be subject to a temperature setback if you operate one heating circuit in "Constant day" mode, and DHW is being heated "by heat. circs".



#### USER INFORMATION

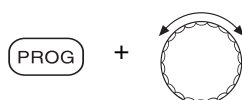
DHW will not be heated if you are operating **all** heating circuits in "Constant night" mode and DHW is heated "by heat. circs".

## 7.10 Selecting a standard program



The MEC2 programming unit is equipped with eight different, preset heating programs that act as standard programs. See the following page for a summary of the preset times of the standard programs.

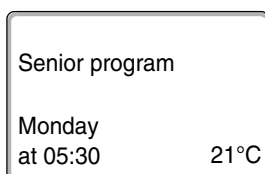
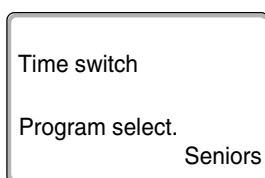
Please check which standard program best meets your requirements. First check the number of switching points, and then the times. The "Family" program is preselected at the factory.



- Open flap.
- Select a heating circuit (→ Chapter 7.6).

Hold down "PROG". Initially the heating circuit is displayed for which you want to select a standard program. Approximately 2 seconds later the designation of the currently selected standard program will appear.

Select the required standard program with the rotary selector (here: "Seniors"). Release the "PROG" key. Now the displayed program has been selected.



The display shows the program designation and the first switching point for the selected heating program (here "Senior program").



Press "Back" to return to the permanent display.



### USER INFORMATION

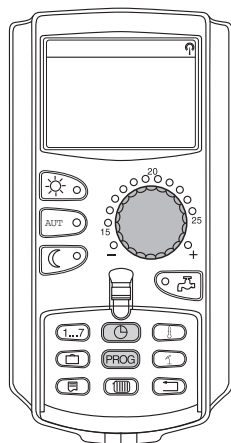
Switching programs are only effective in automatic mode (→ Chapter 6.3.1).

## 7.11 Summary of standard programs

Program designation	Weekday	ON	OFF	ON	OFF	ON	OFF
"Family" (factory setting)	Mo – Th Fr Sa Su	05:30 05:30 06:30 07:00	22:00 23:00 23:30 22:00				
"Early Morning" Early shift	Mo – Th Fr Sa Su	04:30 04:30 06:30 07:00	22:00 23:00 23:30 22:00				
"Late Evening" Late shift	Mo – Fr Sa Su	06:30 06:30 07:00	23:00 23:30 23:00				
"Morning" Part-time work in the morning	Mo – Th Fr Sa Su	05:30 05:30 06:30 07:00	08:30 08:30 23:30 22:00	12:00 12:00	22:00 23:00		
"Afternoon" Part-time work in the afternoon	Mo – Th Fr Sa Su	06:00 06:00 06:30 07:00	11:30 11:30 23:30 22:00	16:00 15:00	22:00 23:00		
"Noon" Midday at home	Mo – Th Fr Sa Su	06:00 06:00 06:00 07:00	08:00 08:00 23:00 22:00	11:30 11:30	13:00 23:00	17:00	22:00
"Single"	Mo – Th Fr Sa Su	06:00 06:00 07:00 08:00	08:00 08:00 23:30 22:00	16:00 15:00	22:00 23:00		
"Seniors"	Mo – Su	05:30	22:00				
"New"	You can enter your own individual program here:						
"Own 1"	If none of the standard programs suit you, you may alter them, have them changed by your heating contractor, or enter a new heating program (→ Chapter 8.2). This will be saved under "Own" and the number of the heating circuit.						

Tab. 1 Standard programs ("ON" = day mode, "OFF" = night mode)

## 7.12 Modifying the standard program by moving switching points



If the switching points, i.e. the times of a standard program at which the system changes over between day and night mode, only partially suit you, you may change them, or ask your local heating contractor to change them for you. The modified standard program is saved under "Own" and the number of the heating circuit. The heating program memory is available for this.

The following example shows how the switching points of the standard program "Family" can be changed for the days Monday to Thursday.

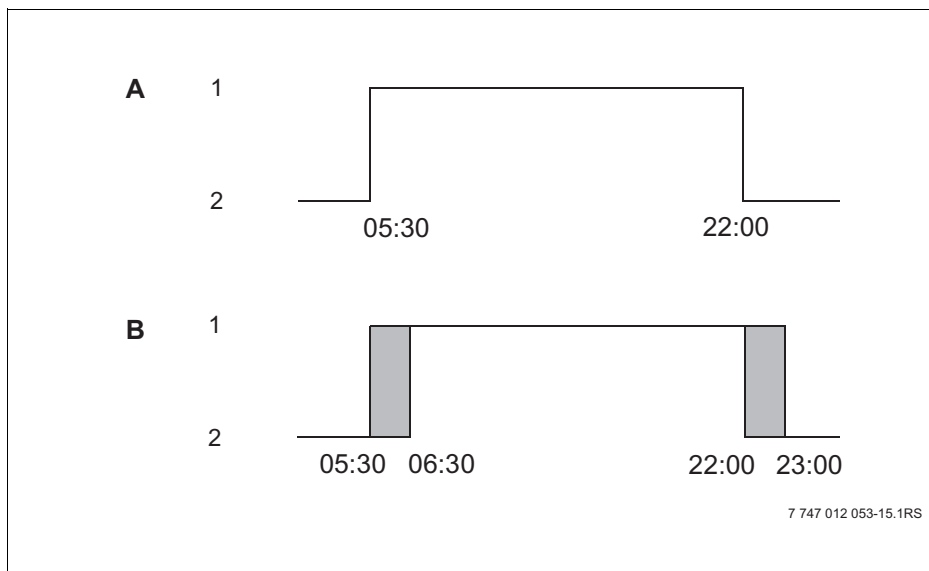


Fig. 14 Changing the switching points 05:30 to 06:30 and from 22:00 to 23:00 (example)

**A** "Family program"

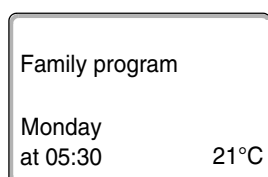
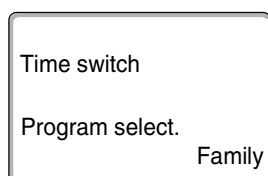
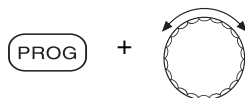
**B** New program "Own program 2"

1 Day mode

2 Night mode

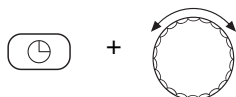
- Open flap.
- Select a heating circuit (here: "Heating circ. 2", → Chapter 7.6).

Hold down "PROG" and select the required standard program with the rotary selector.



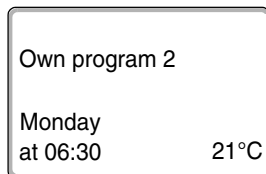
Release the "PROG" key.

The first switching point (Monday, 05:30) appears.



Hold down "Time", and select the required time with the rotary selector.  
Example: "06:30".

Release the "Time" key. The newly adjusted time for the "ON" switching point is now saved.

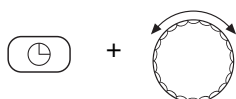


The modified switching point will be saved under the "Own" program and the number of the heating circuit (here "2").



Continue to turn the rotary selector, until the next switching point that you want to change is displayed.

The "OFF" switching point for Monday appears. Now you can modify the time for the "OFF" switching point.



Hold down "Time", and select the required time with the rotary selector.  
Example: "23:00".

Release the "Time" key. The newly adjusted time for the "OFF" switching point is now saved.

### Next switching point



Continue to turn the rotary selector until the next switching point is displayed.

The next switching point (Tuesday, 05:30) appears.

Also change the following switching points to 06:30 and 23:00. The system will now heat from 06:30 to 23:00 Monday to Thursday.



Press "Back" to return to the permanent display.



### USER INFORMATION

You can change the weekday if you press "Weekday" instead of "Time".

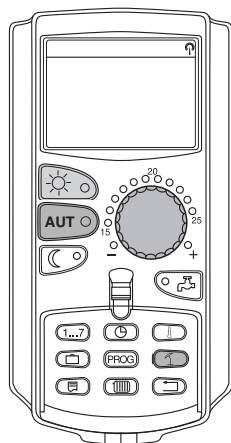
You can change the switching state ("ON"/"OFF") by pressing "Display" instead of "Weekday" or "Time". The operating mode determines the switching state: "ON" = day mode; "OFF" = night mode.

- Ensure that a stop point is associated with every start point.

The modified standard program is saved under "Own" and the number of the heating circuit.



## 7.13 Setting the summer/winter time adjustment



In addition to the outside temperature, your control unit considers the ability of the building to store heat and its thermal insulation (creating from these the "Adjusted outside temperature", → Fig. 15). After a delay, it automatically changes over between summer and winter mode.

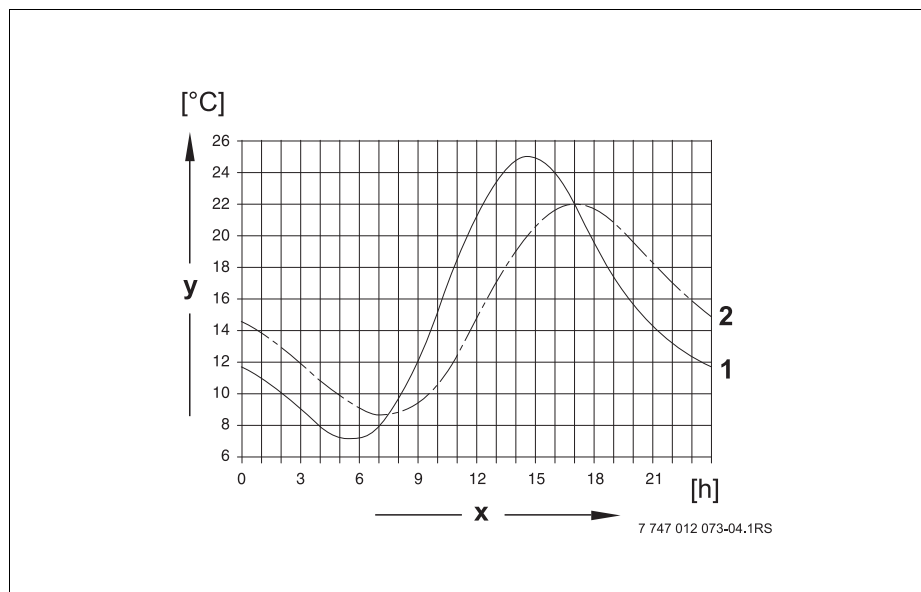


Fig. 15 Actual and adjusted outside temperatures compared

- 1 Current outside temperature
- 2 Adjusted outside temperature
- x Time
- y Temperature

### Summer mode

Heating is switched off if the "Adjusted outdoor temperature" exceeds the factory-set changeover threshold of 17 °C.

Summer mode is indicated on the display by symbol ☀.

DHW heating remains operational.

Press "Day mode" if you want to heat at short notice in summer mode.



The heating system returns to automatic summer mode if you press "AUT".

### Winter mode

DHW and central heating are operational if the "Adjusted outside temperature" falls below the factory-set changeover threshold of 17 °C.

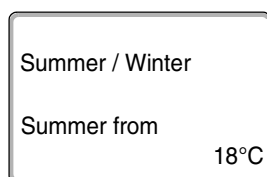
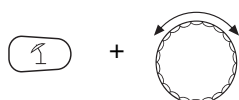
### Setting the automatic summer/winter time adjustment

Select the required heating circuit before calling up the summer/winter time adjustment. You may select either an individual heating circuit or all circuits assigned to the MEC2.

- Select a heating circuit (→ Chapter 7.6).  
Example: Heating circ. 2

### Setting the changeover temperature

Hold down "Su/Wi". The display briefly shows the heating circuit. Then turn the rotary selector to the required changeover temperature, below which you want to heat (here: "18°C").



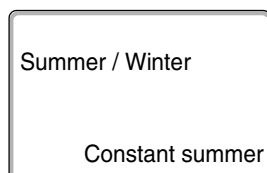
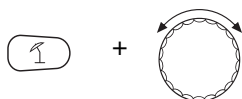
The display shows the set changeover temperature.

Release the "Su/Wi" key to save your input.

### Setting up constant summer mode

- Select a heating circuit (→ Chapter 7.6).  
Example: Heating circ. 2

Hold down "Su/Wi". The display briefly shows the heating circuit. Then turn the rotary selector to a changeover temperature below 10 °C.



The display shows "Constant summer".

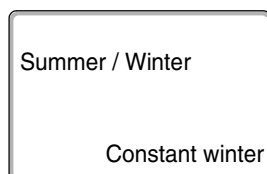
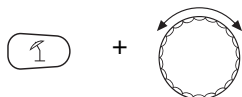
Release the "Su/Wi" key to save your input.

Your heating system will constantly operate in summer mode.

### Setting up constant winter mode

- Select a heating circuit (→ Chapter 7.6).  
Example: Heating circ. 2

Hold down "Su/Wi". The display briefly shows the heating circuit. Then turn the rotary selector to a changeover temperature above 30 °C.

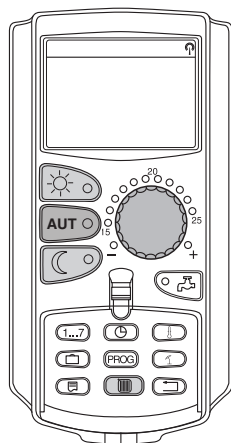


The display shows "Constant winter".

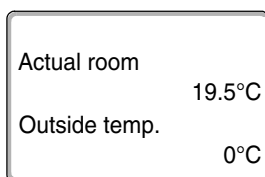
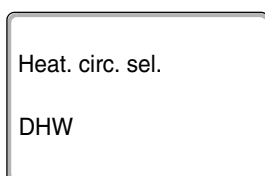
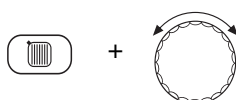
Release the "Su/Wi" key to save your input.

Your heating system will constantly operate in winter mode.

## 7.14 Setting the DHW operating mode



This allows you to change the DHW temperature in the DHW cylinder.



- Open flap.

Hold down "Heating circuit" and select "DHW" with the rotary selector.

Release the "Heating circuit" key.

The permanent display will then appear again.

Select one of the following operating modes for DHW:

- "Const. operation"  
The water inside the DHW cylinder is constantly maintained at the set temperature.
- "Automatic"  
30 minutes before the first heating circuit is started, the boiler heats the DHW cylinder to the set temperature, and stops when the last heating circuit is switched off (factory setting). Alternatively, you can enter your own DHW program (→ Chapter 8.3).
- "DHW OFF"  
DHW heating is switched off. By pressing "DHW", you will switch DHW heating on for the duration of "DHW heating once".



Press "Day mode" to select constant operation. After approximately three seconds, the permanent display will appear again.

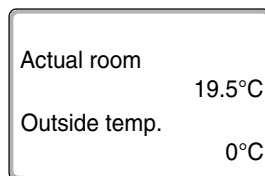
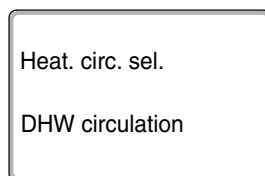
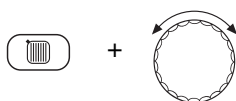
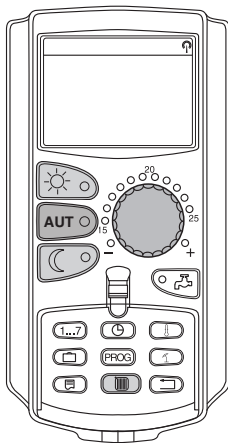


Press "Automatic" to select automatic mode. After approximately three seconds, the permanent display will appear again.



Press "Night mode" to stop DHW heating. After approximately three seconds, the permanent display will appear again.

## 7.15 Setting the operating mode for DHW circulation



The DHW circulation pump provides an almost instantaneous supply of DHW to the draw-off points. To this end, the DHW will be circulated by a separate DHW circulation pump twice per hour for three minutes. Your heating contractor can match this interval to requirements at the service level.

You can modify the operating mode of DHW circulation as follows:

- Open flap.

Hold down "Heating circuit" and select "DHW circulation" with the rotary selector.

Release the "Heating circuit" key.

The permanent display will then appear again.

Select one of the following operating modes for DHW circulation pump:

- "Const. operation"  
The DHW circulation pump will operate at the set interval, i.e. independently of the heating circuits.

Press "Day mode" to select constant operation. After approximately three seconds, the permanent display will appear again.

- "Automatic"  
30 minutes before the first heating circuit is started, the DHW circulation pump starts to run at the set interval, and stops when the last heating circuit is switched off (factory setting). Alternatively, you can enter your own DHW circulation pump program (→ Chapter 8.4).

Press "Automatic" to select automatic mode. After approximately three seconds, the permanent display will appear again.

- "DHW circ. OFF"  
The DHW circulation pump will not be controlled. Pressing "DHW" switches the DHW circulation pump on for the duration of heating DHW once.

Press "Night mode" to switch off DHW circulation. After approximately three seconds, the permanent display will appear again.

## 7.16 Setting the holiday function

Using the holiday function, you can heat at a lower room temperature if you are away for longer periods.

Example:

You are on holiday for the next five days and want to heat less during that time, e.g. you want to operate heating circuit 2 with a reduced room temperature of 12 °C.

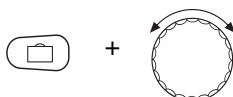
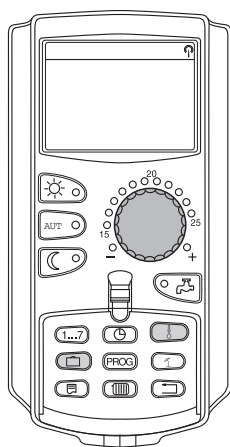


### USER NOTE

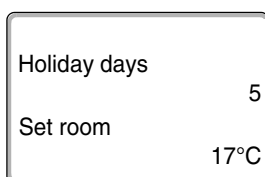
As the holiday function is enabled immediately after completing your entry, you should only enter this function on the day of your departure.

- Select a heating circuit (→ Chapter 7.6).  
Example: Heating circ. 2

Enter holiday function:



Hold "Holiday" down, and select the required number of days with the rotary selector (here: "5").



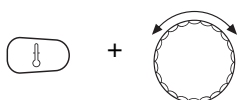
The display shows "5".

Release the "Holiday" key to save your input.

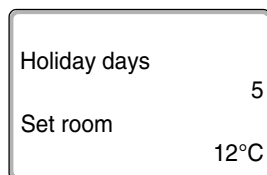


### USER INFORMATION

The "Set room" display only appears if the "Hold room temp" holiday reduction type or "Reduced" has been set by the contractor.



Hold "Temp" down, and select the required temperature with the rotary selector (here: "12°C").



The display shows "12°C".

Release the "Temp" key to save your input.

The holiday function is enabled immediately after entry.

You can cancel the holiday function any time by calling it up, as described above, and by setting the number of holiday days to "0".



#### USER INFORMATION

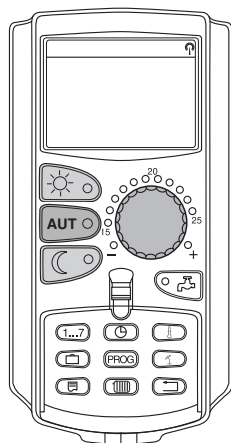
DHW heating and DHW circulation will be switched off automatically if DHW is heated subject to the heating circuits ("Program select. by heat. circs", → Chapter 8.3), and all heating circuits are set to holiday mode. You cannot enter a separate DHW holiday function.



#### USER INFORMATION

A separate DHW holiday function can be entered if DHW is produced according to a separate time program ("Program select. own DHW", → Chapter 8.3). The DHW circulation pump is switched off automatically during the DHW holiday function.

## 7.17 Interrupting and continuing the holiday function

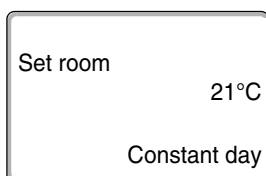


You may interrupt your holiday program at any time and provide heat according to the set day and night temperatures.

Only the "AUT" LED illuminates if a heating circuit is in holiday mode.

### Interrupting the holiday function

Press "Day mode".



The display shows "Constant day"

You may interrupt the holiday function any time by pressing "Day mode". In this case the system heats according to the set room temperature (→ Chapter 6.4).

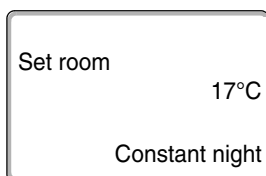
### Continuing the holiday function

Press "AUT" to continue the interrupted holiday function.



### Interrupting the holiday function

Press "Night mode".



The display shows "Constant night".

You may interrupt the holiday function at any time by pressing "Night mode". In this case the system heats according to the set night temperature (→ Chapter 6.4).

### Continuing the holiday function

Press "AUT" to continue the interrupted holiday function.



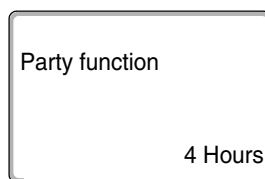
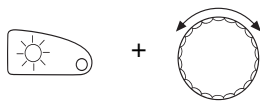
## 7.18 Setting the party function

This function only applies to heating circuits to which the MEC2 has been assigned as a remote control unit ("MEC heat. circ."). All heating circuits without an MEC2 operate normally.

Enter the number of hours the heating system should only operate with the preset room temperature.

Example:

You have a party and want to heat for the next four hours to the preset room temperature.



Hold down "Day mode", and **simultaneously open the flap of the MEC2**.

"Party function" is enabled. Hold "Day mode" down, and turn the rotary selector until the required number of hours is displayed (here: "4").

The display shows the party function together with the set number of hours.

Release the "Day mode" key.

The party function starts immediately. After the set time has expired, the heating system returns to automatic heating mode.

If you want to cancel the party function, call up party function as described above and turn the rotary selector to "0".

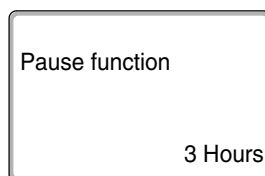
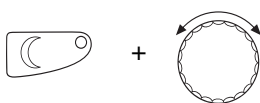
## 7.19 Setting the pause function

This function only applies to heating circuits to which the MEC2 has been assigned as a remote control unit ("MEC heat. circ."). All heating circuits without an MEC2 operate normally.

Enter the number of hours the heating system should only operate to the preset room temperature.

Example:

You are about to leave your home for three hours and would like to heat less whilst you are away.



Hold down "Night mode", and **simultaneously open the flap of the MEC2**.

The pause function is enabled. Continue to hold down "Night mode", and select the required number of hours with the rotary selector (here: "3").

The display shows the pause function together with the set number of hours.

Release the "Night mode" key.

The pause function starts immediately. After the set time has expired, the heating system returns to automatic heating mode.

If you want to cancel the pause function, call up pause function as described above and turn the rotary selector to "0".



## 7.20 Room temperature matching



### USER INFORMATION

This function is only available if the MEC2 is fitted within the living space. If the room temperature shown on the display varies from the actual temperature measured with a thermometer, the display value can be adjusted using "Calibration MEC".

The factory setting is 0 °C. The possible correction range is between +5 °C and -5 °C.

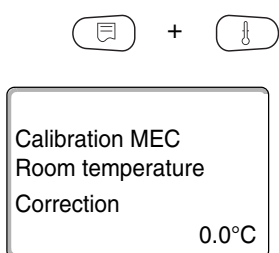
Example:

Indicated room temperature 22 °C, actual room temperature 22.5 °C

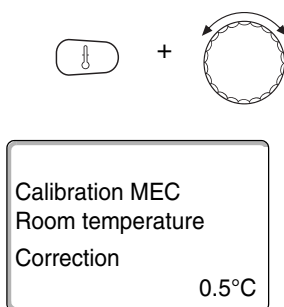
- Open flap

Simultaneously press "Display" and "Temp" and then release both.

The display shows "Calibration MEC".



Hold down "Temp" and turn the rotary selector to the required value (here: "0.5°C").



The display shows the set value.

Release the "Temp" key to save your input.



Press "Back" to return to the permanent display.

The display shows the corrected temperature (22.5 °C).

## 7.21 Automatic maintenance message

Note  
maint. message



maint. after  
Date  
required

maint. after  
Hours run  
required

If your local heating contractor has (with your agreement) enabled the "automatic maintenance message", the maintenance message "Note maint. message" is displayed at a predetermined time (on a particular date or after so many hours run).

- Open flap.

Turn the rotary selector.

You will see either "maint. after Date required" or "maint. after Hours run required".

- Notify your local heating contractor to schedule the inspection and maintenance work.

The Logamatic telecontrol system (Easycom Web) enables the maintenance message to be transmitted automatically to your mobile, your PC or your fax machine. This option will only be available in the UK late 2009.



### USER INFORMATION

The automatic maintenance message remains active until your local heating contractor resets it.

## 8 Additional programming options

This chapter is intended to provide more detailed information to those of our customers who would like to familiarise themselves further with the functions of their heating system.

The following pages will explain how to change a standard program, if none of the preset standard programs (→ Chapter 7.11) match your lifestyle.

You will learn how to create a new heating program which accurately matches your personal circumstances.

### 8.1 Modifying the standard program by inserting/deleting switching points

#### 8.1.1 Inserting switching points

You can interrupt heating phases by inserting switching points (details: Weekday/time/temperature) into an existing heating program.

Example:

The standard "Family" program provides constant heating on Fridays from 05:30 until 23:00. Insert two new switching points if, for example, you do not want to heat on Fridays from 10:00 to 13:00.

Your modified program will be saved under the program name "Own" and the number of the heating circuit.

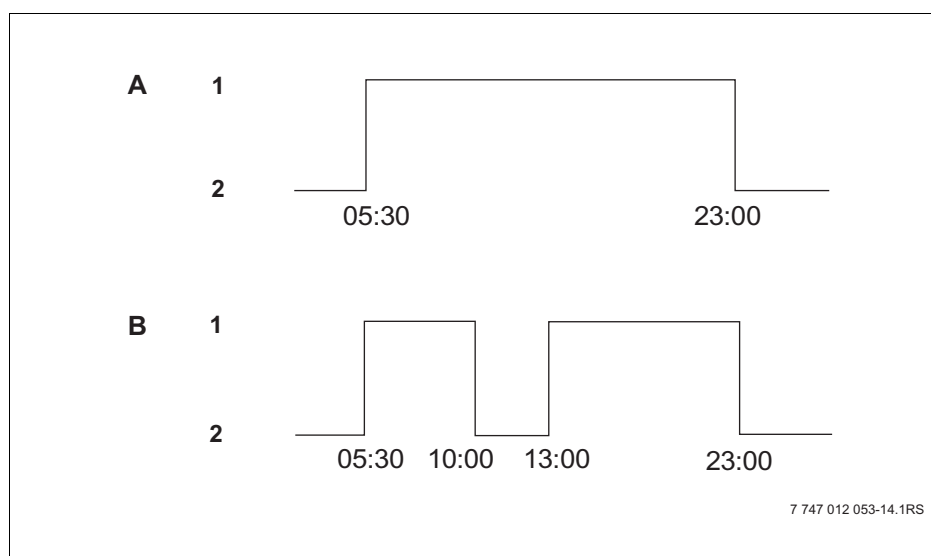
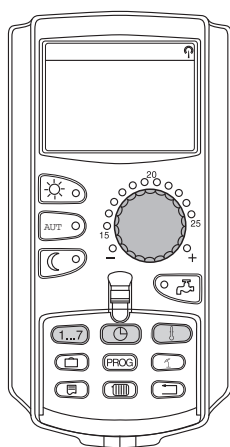


Fig. 16 Inserting switching points to interrupt a heating phase

A "Family program"

B New program "Own program 2"

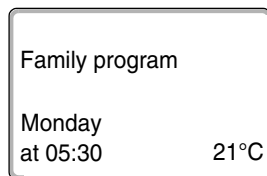
1 Day mode

2 Night mode

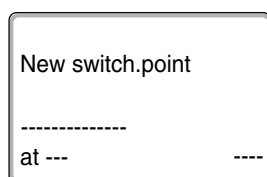
- Select a heating circuit (→ Chapter 7.6).  
Example: Heating circ. 2
- Select the standard program for the chosen heating circuit (→ Chapter 7.10).  
(here: "Program select. Family")

Release the "Prog" key to activate the selected standard program  
(here: "Family program").

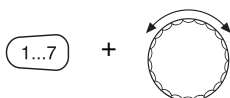
The display shows the selected standard program.



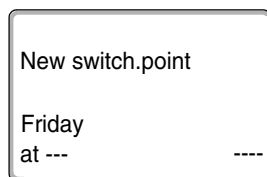
Turn the rotary selector once anti-clockwise, until "New switch.point" is displayed.



The display shows the blank screen "New switch.point" for the new switching point.



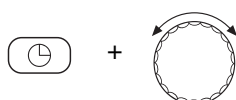
Hold down "Weekday" and turn the rotary selector to the required day  
(here: "Friday").



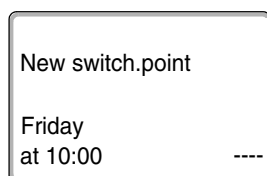
You can select days individually or in blocks:

- Monday – Thursday
- Monday – Friday
- Saturday – Sunday
- Monday – Sunday

Release "Weekday" to save your input.

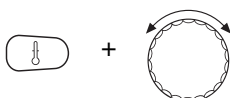


Hold "Time" down, and select the required time with the rotary selector  
(here: "10:00").

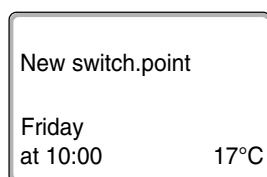


"Friday at 10:00" is now set as the new switching point.

Release "Time" to save your input.



Hold "Temp" down, and select the required temperature with the rotary selector  
(here: "17°C").



The display shows the set value.

Release the "Temp" key to save your input.

**USER INFORMATION**

You cannot freely enter any temperature here. Only the factory-set day and night temperatures are available, which you can, however, modify yourself (→ Chapter 6.4).

**USER INFORMATION**

Only after all three details (day/time/temperature) have been defined for the new switching point will it be automatically saved under "Own program" and the heating circuit number (here: "2"). This saving is not shown on the display. The display shows the blank screen "New switch.point" for the next switching point.

New switch.point

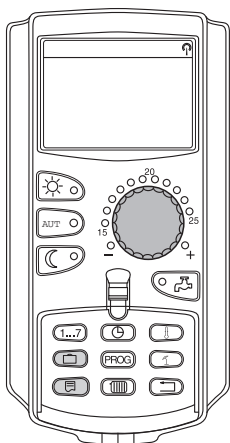
-----

at ---                      ---

To enter the next switching point (e. g. "Friday, 13:00, 21 °C"), simply repeat the procedure detailed above.



Press "Back" to return to the permanent display.



### 8.1.2 Deleting switching points

Example:

In the "Family program", you want to delete the switching point "Monday 22:00" for heating circuit 2.

Your modified program will be saved under the program name "Own" and the number of the heating circuit.

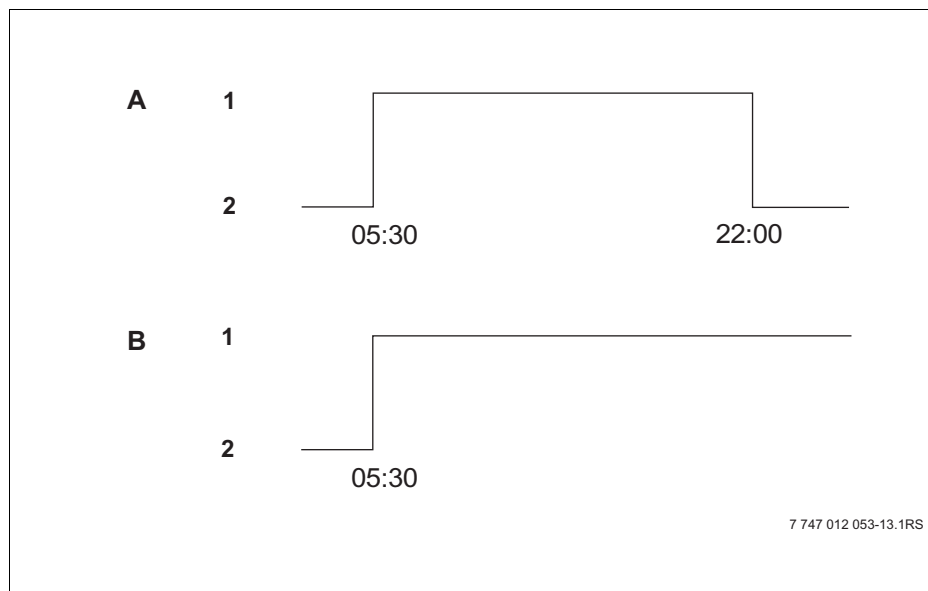


Fig. 17 Deleting a switching point

**A** "Family program"

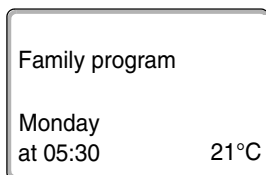
**B** New program "Own program 2"

**1** Day mode

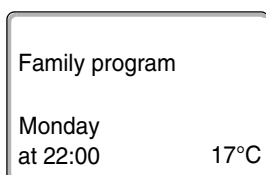
**2** Night mode

- Select a heating circuit (→ Chapter 7.6).  
Example: Heating circ. 2
- Select the standard program for the chosen heating circuit (→ Chapter 7.10).  
Example: Family program

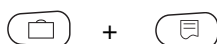
The first switching point (start point): "Monday at 05:30" at "21°C" will be displayed.



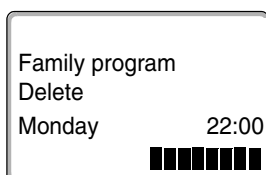
Turn the rotary selector to the switching point you want to delete (here: "22:00").



The switching point to be deleted is displayed.



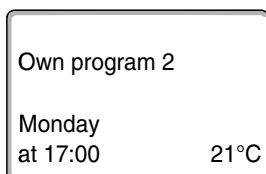
Simultaneously press and hold "Display" and "Holiday".



The bottom line shows eight blocks that are deleted in one-second intervals from left to right. When no blocks are left, the switching point has been deleted.

The deleting process will be terminated if you release the keys prematurely.

Simultaneously release "Holiday" and "Display" to save your input.



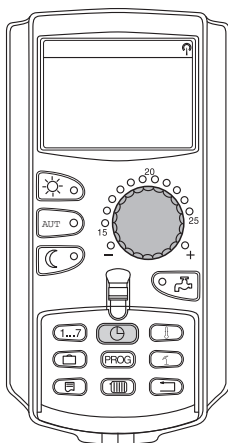
The display shows the next switching point.

The new program that has been modified by the deletion is saved under "Own program" and the relevant heating circuit number (here: "2").

You can call up your new program by pressing "Prog" and turning the rotary selector (→ Chapter 7.10).

Press "Back" to return to the permanent display.





### 8.1.3 Deleting a heating phase

A heating phase consists of two switching points – a start and a stop point. If you wish to delete a heating phase, both switching times must be deleted.

Example:

In the "Midday program" you want to delete the heating phase on Monday from 11:30 to 13:00, to create a single heating phase from 08:00 to 17:00 for heating circuit 2.

Your modified program will be saved under the program name "Own" and the number of the heating circuit.

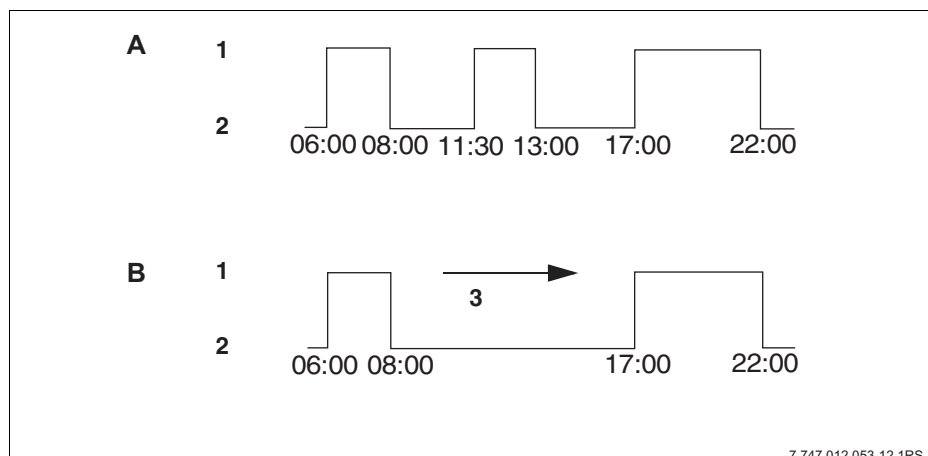


Fig. 18 Deleting a heating phase

**A** "Midday program"

**B** New program "Own program 2"

**1** Day mode

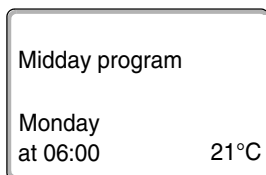
**2** Night mode

**3** Delete

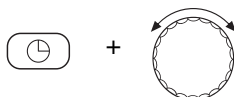
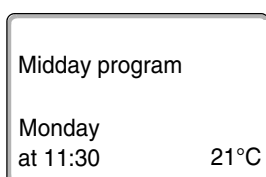


- Select a heating circuit (→ Chapter 7.6).  
Example: Heating circ. 2
- Select the standard program for the chosen heating circuit (→ Chapter 7.10).  
Example: "Midday program"

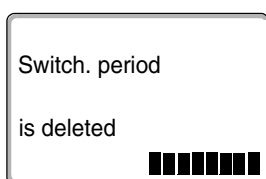
The first switching point (start point): "Monday at 06:00" at "21°C" will be displayed. The displayed temperature depends on the set room temperature.



Turn the rotary selector to the start point of the heating phase you want to delete (here: "11:30").



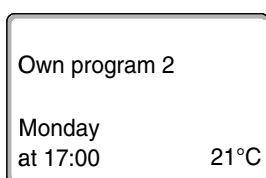
Hold down "Time" and turn the rotary selector to the stop point of the heating phase you want to delete (here: "13:00").



If you have selected the stop switching point of the heating phase you want to delete, the bottom line will show eight blocks that are deleted in one-second intervals from left to right. The heating phase has been deleted when no blocks are left.

The deleting process will be terminated if you release the "Time" key prematurely or turn the rotary selector back. In this case all switching points for the heating phase remain active.

Release "Time" to save your input.



The display shows the next switching point.

The new program that has been modified by the deletion is saved under "Own program" and the heating circuit number (here: "2").

You can call up your new program by pressing "Prog" and turning the rotary selector (→ Chapter 7.10).

Press "Back" to return to the permanent display.

### 8.1.4 Connecting heating phases

A heating phase consists of two switching points – a start and a stop point. To connect two consecutive heating phases, place the stop point of the first heating phase onto the start point of the next phase.

Example:

Starting from the "Midday program" for heating circuit 2, you want to join the Monday heating phase from 11:30 to 13:00 to the heating phase 17:00 to 22:00. In other words you want to heat continually from 11:30 until 22:00.

Your modified program will be saved under the program name "Own" and the number of the heating circuit.

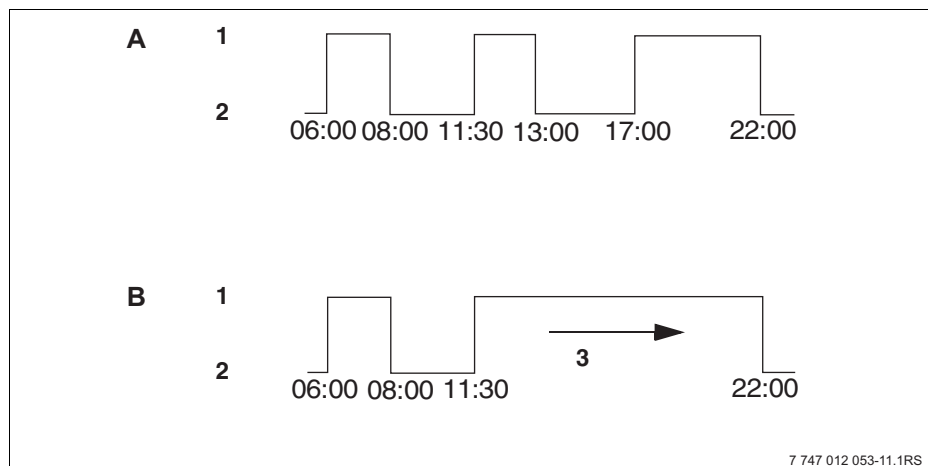
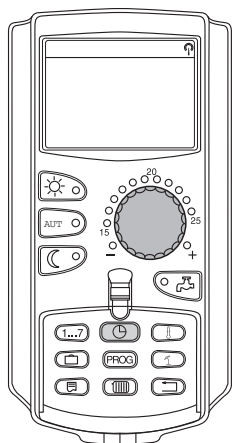
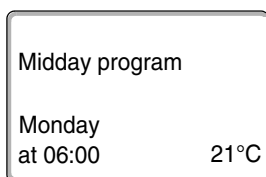


Fig. 19 Connecting two heating phases

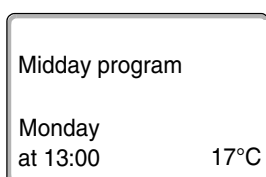
- A** "Midday program"
- B** New program "Own program 2"
- 1** Day mode
- 2** Night mode
- 3** Turn from 13:00 to 17:00

- Select a heating circuit (→ Chapter 7.6).  
Example: Heating circ. 2
- Select the standard program for the chosen heating circuit (→ Chapter 7.10).  
(here: "Midday program")

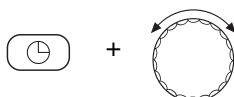
The first switching point (start point): "Monday at 06:00" at "21°C" will be displayed.



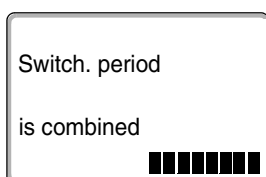
Turn the rotary selector to the stop point of the first heating phase you want to connect with another (here: "13:00").



The display shows the stop point to be connected.



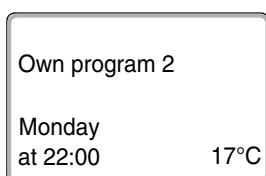
Hold down "Time" and turn the rotary selector clockwise, until the start point of the second heating phase, i.e. the next consecutive heating phase, is displayed, which you wish to combine with the first heating phase (here: "17:00").



If you have selected the start point of the next consecutive heating phase, the bottom line will show eight blocks, which are deleted in one-second intervals from left to right. When no blocks are left both heating phases will have been combined.

The deleting process will be terminated if you release the "Time" key prematurely or turn the rotary selector back. In this case all switching points for the heating phase remain active.

Release "Time" to save your input.



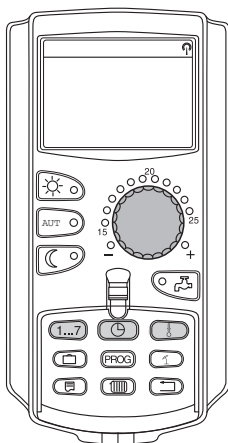
The new program that has been modified by the connection process is saved under "Own program" and the heating circuit number (here: "2").

You can call up your new program by pressing "Prog" and turning the rotary selector (→ Chapter 7.10).



Press "Back" to return to the permanent display.

## 8.2 Creating a new heating program



You may enter up to 42 switching points per week and heating circuit to create a new heating program. A single switching point comprises three details: Weekday, time and temperature.

The newly created program will be saved under "Own program" and the relevant heating circuit number.

Example:

Monday – Friday,  
from 05:00 21 °C, from 21:00 17 °C

Saturday – Sunday,  
from 09:30 21 °C, from 23:30 17 °C

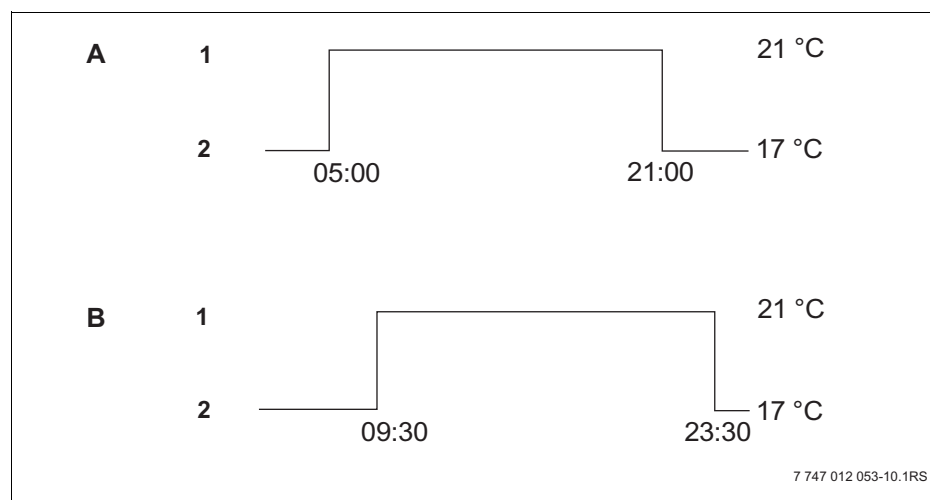


Fig. 20 New heating program

**A** New heating program "Own program 2"  
Monday – Friday

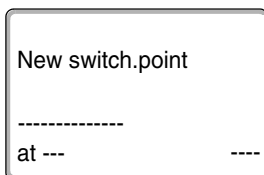
**B** Saturday – Sunday

**1** Day mode

**2** Night mode

- Select a heating circuit (→ Chapter 7.6).  
Example: Heating circ. 2
- Select the standard program "Program select. new" for this heating circuit (→ Chapter 7.10).

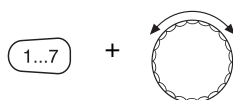
The display shows the blank screen "New switch.point".



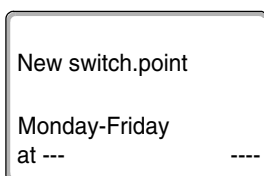
### Enter the first switching point (Monday – Friday, 05:00, 21 °C)

You can select days individually or in blocks:

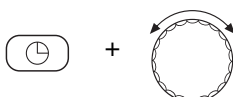
- Monday – Thursday
- Monday – Friday
- Saturday – Sunday
- Monday – Sunday



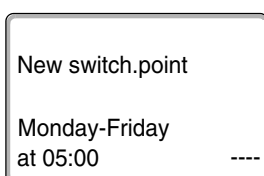
Hold down "Weekday" and select the required date or block with the rotary selector (here: "Monday-Friday").



Release "Weekday" to save your input.

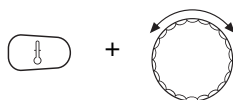


Hold "Time" down, and select the required time with the rotary selector (here: "05:00").

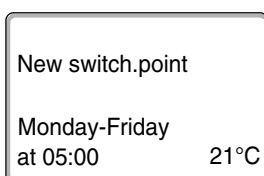


The display shows the new switching point.

Release "Time" to save your input.



Hold "Temp" down, and select the required temperature with the rotary selector (here: "21°C").



You cannot freely enter any temperature here. Only the factory-set day and night temperatures are available, which you can, however, modify yourself (→ Chapter 6.4).



Release the "Temp" key to save your input.



New switch.point

at ---

Only after all three details (day/time/temperature) have been set for the new switching point will it be automatically saved under "Own program" and the heating circuit number (here: "2"). This saving is not shown on the display. The display shows the blank screen "New switch.point" for the next switching point.

- Enter the second switching point (Monday – Friday, 21:00, 17 °C).
- Enter the third switching point (Saturday – Sunday, 09:30, 21 °C).
- Enter the fourth switching point (Saturday – Sunday, 23:30, 17 °C).

To enter the second to fourth switching points, follow the previous steps.



Press "Back" to return to the permanent display only after all switching points have been correctly entered.

Your heating program will now operate according to your "Own program". You can call up your new "Own program" by pressing "Prog" and turning the rotary selector.

### 8.3 Creating a new DHW program

You may operate DHW heating either according to the factory settings "Program select. by heat. circs" or according to your own switching program "Program select. own DHW".



#### USER INFORMATION

With the factory setting "Program select. by heat. circs", DHW heating begins 30 minutes prior to the first switching point of all heating circuits associated with this control unit, and ends when the last heating circuit is switched off.

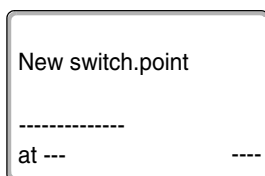
If DHW is to be heated independently of the heating circuits, you can enter your own new DHW program as follows:

Example:

On all weekdays DHW should be heated from 06.30 until 09.00.

- Select a heating circuit (→ Chapter 7.6).  
(here: "DHW")
- Select a program for the heating circuit "DHW" (→ Chapter 7.10).  
(here: "Program select. new")

The display shows the blank screen "New switch.point" for the new switching point.



- Enter the switching points (→ Chapter 8.2).



#### USER INFORMATION

Only after all three details (day/time/temperature) have been defined for the new switching point will it be automatically saved under "Own program DHW", and the heating circuit selection "DHW". This saving is not shown on the display. The display shows the blank screen "New switch.point" for the next switching point. Repeat this process for all required switching points.

Your DHW heating will no operate according to your "Own program DHW". You can call up your new "Own program DHW" by pressing "Prog" and turning the rotary selector (→ Chapter 7.6).

## 8.4 Creating a new DHW circulation pump program

You can operate the DHW circulation pump either according to the factory settings "Program select. by heat. circs" or according to your own new switching program "Program select. own CP".



### USER INFORMATION

With the factory setting "Program select. by heat. circs", the DHW circulation pump starts automatically 30 minutes prior to the first switching point of all heating circuits associated with this control unit, and ends when the last heating circuit is switched off.

If your circulation pump works independently of the heating circuits, you can enter your own new DHW circulation pump program as follows:

Example:

The DHW circulation pump is to run on all weekdays from 06:30 to 09:00.

- Select a heating circuit (→ Chapter 7.6).  
(here: "DHW circulation")
- Select a program for the heating circuit "DHW circulation" (→ Chapter 7.10).  
(here: "Program select. new")

The display shows the blank screen "New switch.point" for the new switching point.

New switch.point

-----  
at --- ----

- Enter the switching points (→ Chapter 8.2).



### USER INFORMATION

Only after all three details (day/time/temperature) have been defined for the new switching point will it be automatically saved under "Own program CP" and the heating circuit number "DHW circulation". This saving is not shown on the display. The display shows the blank screen "New switch.point" for the next switching point. Repeat this process for all required switching points.

Your DHW circulation pump will now operate according to your "Own program CP". You can call up your new "Own program CP" by pressing "Prog" and turning the rotary selector.



## 9 Modules and their functions

The following lists all modules that are or can be fitted in the Logamatic 4321/4322 control units.

		Logamatic	
		4321	4322
Module	MEC2 programming unit	O	X
	CM431 controller module	O	O
	ZM434 central module Burner + boiler circuit functions	O	O
	FM441 function module 1 heating circuit + 1 DHW circuit	X	X
	FM442 function module 2 heating circuits	X	X
	FM443 function module Solar thermal circuit	X	X
	FM444 function module Alternative heat source	X	X
	FM445 function module LAP/LSP (primary system)	X	X
	FM446 function module EIB interface	X	X
	FM448 function module Central fault message	X	X
	ZM426 auxiliary module Aux. high limit safety cut-out (STB)	X	X
	FM458 function module strategy module	X <sup>1)</sup>	X <sup>1)</sup>

Tab. 2 Standard equipment level and optional modules

<sup>1)</sup> May only be connected to control unit 1 (address 0 or 1).

O = Standard equipment

X = Accessory

Along with the ZM434 central module, which is part of the standard equipment of the Logamatic 4321/22 control units, the most commonly used function modules, i.e. FM441 and FM442 function modules are described on the following pages.


The MEC2 menus in these operating instructions relate to these modules.

All other modules are explained in separate technical module documentation.

## 9.1 ZM434 burner and boiler circuit module (standard equipment)

The ZM434 module is part of the standard equipment level of the Logamatic 4321 and 4322 control units.

The switches on the module are only provided for service and maintenance functions.

If the switches are not in automatic position, the MEC2 shows a message to this effect and fault indicator  illuminates.



### USER INFORMATION

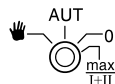
Never use the switches to switch off the system when you have to temporarily leave the installation.

Use the holiday function for this purpose (→ Chapter 7.16).

The control functions remain operational in manual mode.

### Burner function

Burner switch



### USER INFORMATION

The switch should normally be set to "AUT".

The positions **0**, **Manual** and **max I + II** are special settings that should only be operated by specialists when faults exist.

The burner may be directly controlled with the switch. However, the control unit continues to operate.

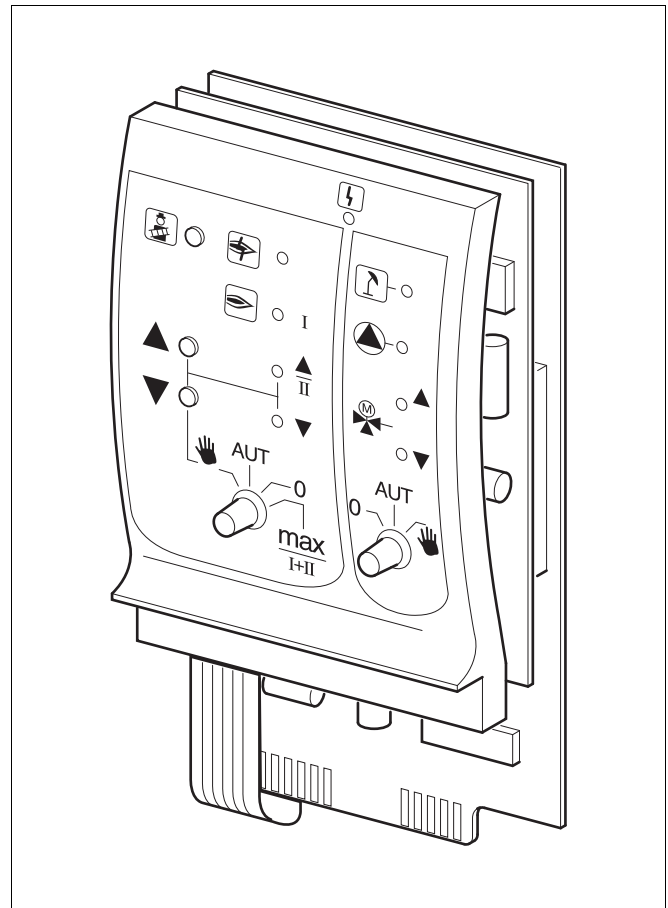


Fig. 21 ZM434

Display



General fault, e.g. on-site fault, sensor fault, external faults, wiring faults, internal module faults, manual mode.

These fault messages appear as plain text on the MEC2 programming unit.

### LEDs for burner functions

Display



Burner fault

Display



Burner operational

Display



Modulation output is increased/  
stage 2 operational

Display



Modulating output is lowered

### LEDs for boiler circuit functions

Display



Boiler circuit in summer mode

Display



Boiler pump operational

Display





Mixer opens towards the boiler

Display

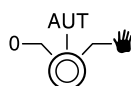


Mixer opens towards the heating circuit

- : As a base load, only the first stage is enabled for single and two-stage burners. For modulating burners, the burner output can be variably increased using ▲ and reduced using ▼.
- AUT: The burner operates in automatic mode.
- 0: The burner is switched off.  
Exception: If the switch for burner emergency mode is set to .
- max I+II: The burner operates continuously at maximum output.

### Boiler circuit function



Switch for boiler circuit



#### USER INFORMATION

The switch should normally be set to "AUT".

The positions **0** and **Manual** are special settings, which should only be operated by specialists in case of faults.


- : Any installed boiler pump will be switched on. The boiler circuit servomotor can be operated manually.
- AUT: The boiler circuit operates in automatic mode.
- 0: Any installed boiler pump will be switched off. The boiler circuit servomotor can be operated manually.  
LEDs indicate the currently enabled functions.
- : "Flue gas test" key (explanation → Chapter 10).

Current functions are indicated by LEDs.

## 9.2 FM441 function module (accessory)

The FM441 module regulates one heating circuit and one DHW heating supply.

The switches on the module are only provided for service and maintenance functions.

If the switches are not set to automatic, a corresponding message appears on the MEC2 programming unit and the fault indicator  illuminates.



### USER INFORMATION

Never use the switches to switch off the system when you have to temporarily leave the installation.

Use the holiday function for this purpose (→ Chapter 7.16).

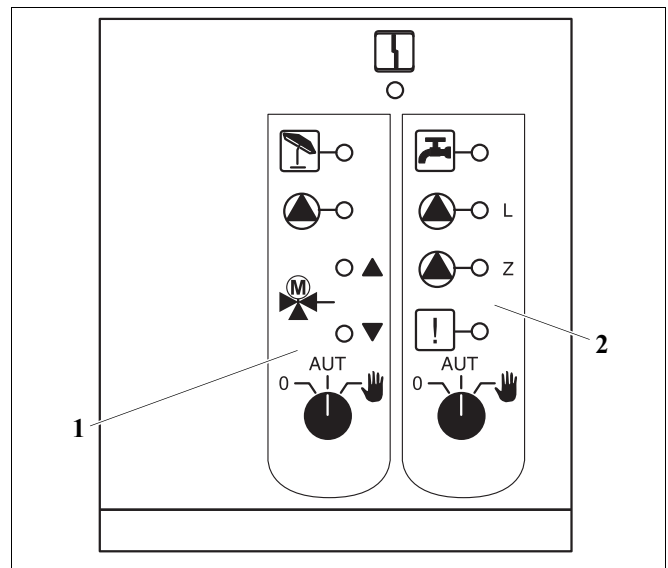











Fig. 22 FM441 function module

1 Heating circ.

2 DHW

Display  General fault, e.g. on-site fault, sensor fault, external faults, wiring fault, internal module fault, manual mode. The fault messages appear as plain text on the MEC2 programming unit.

### LEDs for the following functions:

Display		"Mixer opens" (hotter)
Display		"Mixer closes" (colder)
Display		Heating circuit in summer mode
Display		DHW in night mode below the set temperature.
Display		Heating circuit pump operational
Display	 – L	Cylinder primary pump operational
Display	 – Z	DHW circulation pump operational
Display		Thermal disinfection enabled

## Heating circuit and DHW function

Heating circuit switch (→ Fig. 23, [1]) and DHW (→ Fig. 23, [2]):

For heating circuit:





For DHW supply:



### USER INFORMATION

The switch should normally be set to "AUT".

Positions 0 and  (manual) are special settings reserved for qualified personnel only.

- : The heating circuit pump or the primary pump will be switched on.  
The mixer is switched volt-free and can be manually operated.  
The DHW circulation pump is switched off.
- AUT: The heating circuit or the DHW circuit operates in automatic mode.
- 0: The heating circuit pump and possibly the cylinder primary pump and DHW circulation pump are switched off.  
The mixer is switched volt-free. The control functions continue to be active.

Current functions are indicated by LEDs.

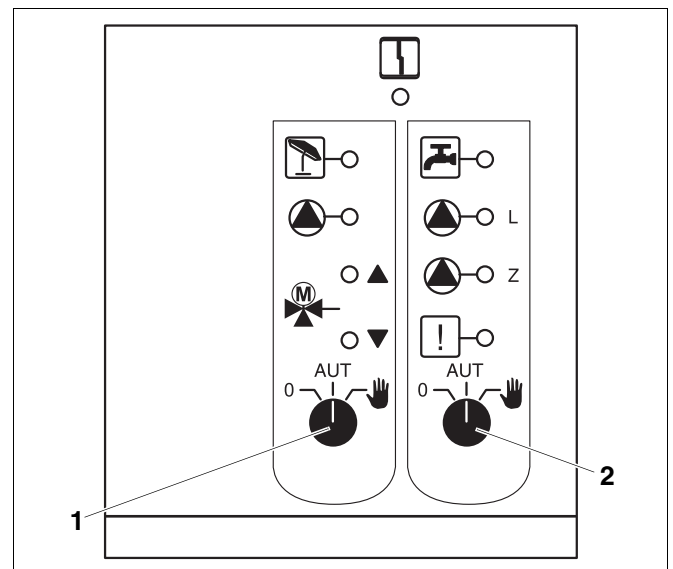


Fig. 23 FM441 function module


- 1 Heating circuit switch
- 2 DHW switch

### 9.3 FM442 function module (accessory)

The FM442 module regulates two independent heating circuits with mixer.

Several FM442 modules can be utilised in your control unit.

The switches on the module are only provided for service and maintenance functions.

If the switches are not set to automatic, a corresponding message appears on the MEC2 programming unit, and the fault indicator  illuminates.




#### USER INFORMATION

Never use the switches to switch off the system when you have to temporarily leave the installation.

Use the holiday function for this purpose (→ Chapter 7.16).

#### Heating circuit function


Heating circuit switch  e.g. for heating circuit 1 or 2.



#### USER INFORMATION

The switch should normally be set to "AUT".

The positions **0** and  (manual mode) are special settings reserved for qualified personnel only.

: The heating circuit pump is switched on. The mixer is switched volt-free and can be manually operated.

**AUT**: The heating circuit operates in automatic mode.

**0**: The heating circuit pump is switched off. The mixer is switched volt-free. The control functions continue to be active.

Current functions are indicated by LEDs.

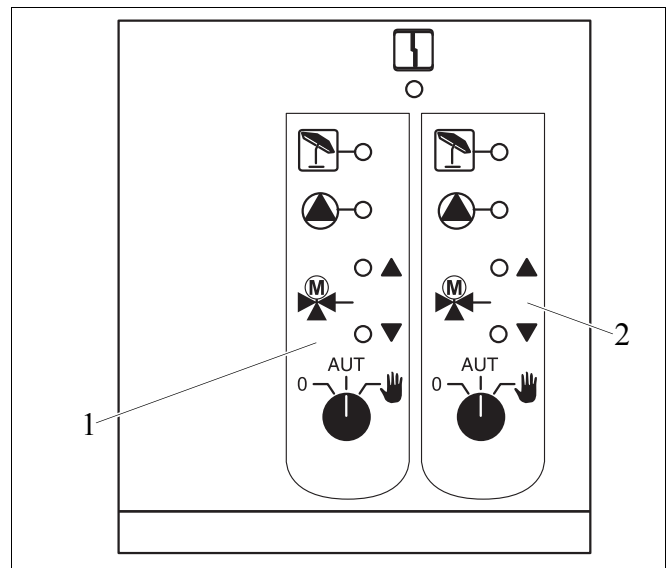



Fig. 24 FM442 function module

1 Heating circuit x


2 Heating circuit y


Display  General fault, e.g. on-site fault, sensor fault, external faults, wiring fault, internal module fault, manual mode. The fault messages appear as plain text on the MEC2 programming unit.

#### LEDs for the following functions:

Display  "Mixer opens" (hotter)

Display  "Mixer closes" (colder)

Display  Heating circuit in summer mode

Display  Heating circuit pump operational

## 10 Boiler flue gas test



### WARNING!

#### RISK OF SCALDING

During the flue gas test, the water can reach a temperature in excess of 60 °C. This creates a risk of scalding at the draw-off points.

- Only draw off mixed hot and cold water during or just after a flue gas test. Note that when mono-lever mixer taps are in their usual position, the water drawn may be too hot.
- Never draw off hot water only when using twin-lever mixer taps.



#### USER INFORMATION

- Observe the relevant national requirements regarding limiting the flue gas losses of your heating system.
- Arrange an annual flue gas test.

The flue gas test may activated at the boiler (see technical boiler documentation).

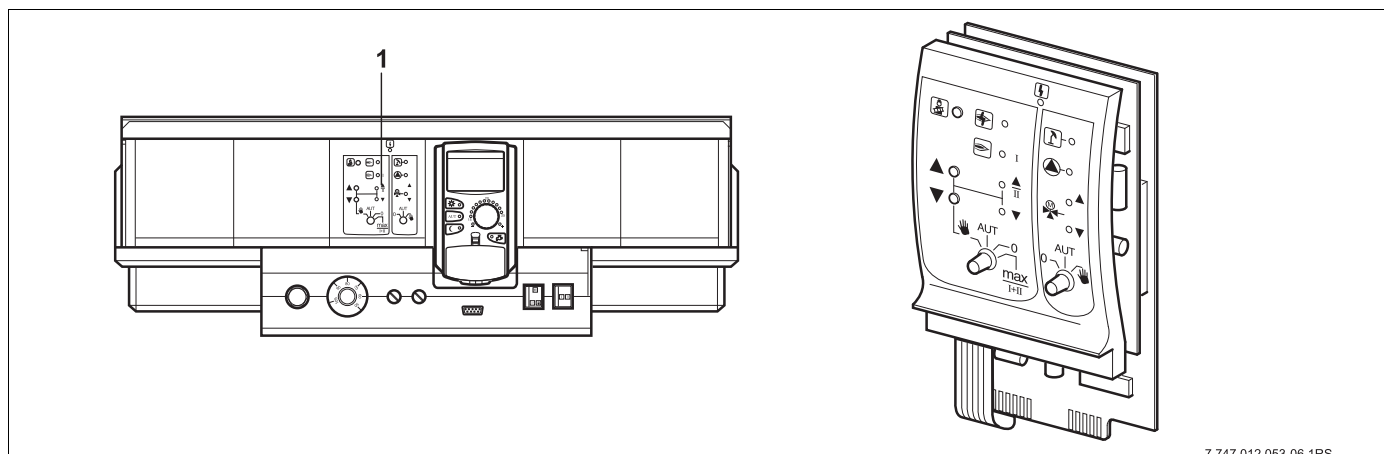




Fig. 25 ZM434

1 ZM434 module

#### "Flue gas test" key on the ZM434 module

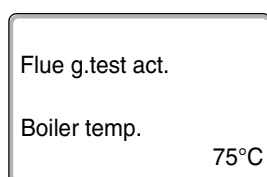
The control unit must be switched on.

- Hold down "Flue gas test" for several seconds to start the flue gas test.

The flue gas test lasts 30 minutes and is indicated on the display. During the flue gas test, the displays  for faults and  for summer mode will flash alternately. The control unit automatically reverts to its previous operating mode when the test has been completed.

- Press "Flue gas test"  again to terminate the flue gas test.

During the flue gas test the MEC2 will show the display on the left.



# 11 Troubleshooting

**Have your heating engineer remedy all faults immediately.**

All system faults are displayed on the MEC2 programming unit.

Report the fault by telephone to your heating contractor. Where necessary, set the module switches according to the instructions in Chapter 12.

Provided your control unit is equipped with the above modules, the following faults may be reported:

- Burner fault boiler
- Boiler temperature sensor
- Outside temperature sensor
- Heating circuit flow sensor  
heating circuit 1 – 8 (if installed)
- DHW temperature sensor
- Boiler is cold
- DHW stays cold
- DHW warning
- Remote control no communication with  
heating circuit 1 – 8 (if installed)
- Thermal Disinfection
- Auxiliary temperature sensor
- Heating circuit 1 – 8 (if installed) pump fault
- DHW pump fault
- DHW inert anode fault
- Safety equipment fault
- No connection to the BUS system
- Address used more than once
- External boiler fault
- Flue gas sensor fault
- Flue gas temperature exceeded
- Address conflict slot 1 – 4 (if installed)
- Wrong module slot 1 – 4 (if installed)
- Unknown module slot 1 – 4 (if installed)
- Function module not connected
- No master control unit installed
- Heating circuit 1 – 8 (if installed) in manual mode
- DHW in manual mode
- Boiler circuit in manual mode
- Burner in manual mode



## 11.1 Simple troubleshooting

If no fault messages are displayed in spite of cool rooms or cool DHW, something may be set up incorrectly or in error.

Observation	Possible cause(s)	Measure
<b>Control unit remains blank or does not function</b>	<ul style="list-style-type: none"> <li>– ON/OFF switch set to "OFF".</li> <li>– No power supply.</li> </ul>	<ul style="list-style-type: none"> <li>– ON/OFF switch set to "ON".</li> <li>– Check mains electrical fuse.</li> <li>– Heating system emergency stop switch set to "ON".</li> </ul>
<b>MEC2 display blank</b>	<ul style="list-style-type: none"> <li>– MEC2 incorrectly plugged in (contact problems).</li> </ul>	<ul style="list-style-type: none"> <li>– Fit MEC2 correctly.</li> </ul>
<b>Room cool</b>	<ul style="list-style-type: none"> <li>– The actual room temperature for the respective heating circuit is incorrectly displayed.</li> </ul>	<ul style="list-style-type: none"> <li>– Check the heating circuit assignment.</li> </ul>
	<ul style="list-style-type: none"> <li>– The programming unit operates in setback mode.</li> </ul>	<ul style="list-style-type: none"> <li>– Check and possibly modify time and heating program.</li> </ul>
	<ul style="list-style-type: none"> <li>– Set room temperature is too low.</li> </ul>	<ul style="list-style-type: none"> <li>– Change the set room temperature.</li> </ul>
	<ul style="list-style-type: none"> <li>– DHW supply runs too long.</li> </ul>	<ul style="list-style-type: none"> <li>– Check DHW heating.</li> </ul>
	<ul style="list-style-type: none"> <li>– Heat sources deliver insufficient heating energy or are shut down.</li> </ul>	<ul style="list-style-type: none"> <li>– Check heat source.</li> </ul>
	<ul style="list-style-type: none"> <li>– Room temperature sensor is incorrectly adjusted.</li> </ul>	<ul style="list-style-type: none"> <li>– Sensor adjustment.</li> </ul>
<b>DHW cool</b>	<ul style="list-style-type: none"> <li>– DHW is set to the wrong temperature.</li> </ul>	<ul style="list-style-type: none"> <li>– Correct the DHW temperature setting.</li> </ul>
	<ul style="list-style-type: none"> <li>– Switching program is incorrectly set up.</li> </ul>	<ul style="list-style-type: none"> <li>– Re-program the switching program.</li> </ul>
<b>DHW too cold (if DHW is heated by external heat source)</b>	<ul style="list-style-type: none"> <li>– External heat sources supply insufficient heating energy.</li> </ul>	<ul style="list-style-type: none"> <li>– Check heat source.</li> </ul>

Tab. 3 Simple troubleshooting

## 11.2 Troubleshooting

Fault	Effect	Remedy
<b>Burner fault</b>	<b>Central heating stays cold.</b>	<ul style="list-style-type: none"> <li>– Reset the burner as described in the boiler or burner documentation.</li> </ul>
<b>Boiler remains cold</b>	<b>Central heating sometimes stays cold.</b>	<ul style="list-style-type: none"> <li>– Check whether the thermostat is set to <b>AUT</b>.</li> <li>– Check whether fuel is available.</li> </ul> <p><b>If not:</b></p> <ul style="list-style-type: none"> <li>– Set burner emergency switch on the control unit to manual mode.</li> <li>– Set the burner switch on the ZM432 module to <b>max/I +II</b>; adjust the boiler water temperature with the thermostat.</li> <li>– Notify your local heating contractor.</li> </ul>
<b>DHW temperature does not rise</b>	<b>DHW sometimes stays too cold.</b>	<ul style="list-style-type: none"> <li>– Check whether the thermostat is set to <b>AUT</b>.</li> </ul> <p><b>If not:</b></p> <ul style="list-style-type: none"> <li>– Set DHW and heating circuit switch on the FM441 module to manual mode.</li> <li>– Notify your local heating contractor.</li> </ul>
<b>Safety chain has responded</b>	<b>Central heating stays cold.</b>	<ul style="list-style-type: none"> <li>– Check whether the boiler is completely filled with water. Check whether the boiler is under at least 1 bar pressure.</li> </ul> <p><b>If this is the case:</b></p> <ul style="list-style-type: none"> <li>– Reset the high limit safety cut-out by removing the domed nut and pressing the reset button located underneath the nut.</li> </ul> <p><b>If not:</b></p> <ul style="list-style-type: none"> <li>– Notify your local heating contractor.</li> </ul>

Tab. 4 Troubleshooting

Fault	Effect	Remedy
Remote control Fault	The control unit works with the last values set on the remote control.	– Notify your local heating contractor.
Boiler sensor fault; Outside temperature sensor fault; Flow sensor fault	The heating system may heat with higher temperatures to safeguard the DHW flow.	– Consult your local heating contractor. Notify your local heating contractor which temperature sensor is faulty.
DHW sensor fault	If the DHW sensor is faulty, water is not heated for safety reasons.	– Notify your local heating contractor.
Heating circuit X in manual mode; DHW in manual mode; Boiler circuit in manual mode; Burner in manual mode	Depending on switch positions, pumps, actuators, etc. will be operated manually.  The control functions continue to operate in manual mode, but have no effect on the heating system.	– The switch was set to manual (for maintenance or troubleshooting). Return the switches to <b>AUT</b> when faults have been remedied.

Tab. 4 Troubleshooting

## 12 Operation in the event of a fault



### RISK TO LIFE

from electric shock.

#### WARNING!

- Never open the control unit.
- In an emergency switch off the control unit (e.g. with the heating system emergency stop) or isolate the heating system from the mains supply by removing the main fuse.
- Arrange for your local heating contractor to rectify any heating system faults immediately.




### SYSTEM DAMAGE

If an underfloor heating system has been installed: Before you operate your heating system manually, check the temperature settings of the temperature limiter on the boiler. If the temperature is set incorrectly the underfloor heating could overheat.

#### CAUTION!


Switches are provided for manual mode on the programming unit and on the modules.

Each pump is activated in position . The mixers stay volt-free and can be manually adjusted.

### 12.1 Emergency mode

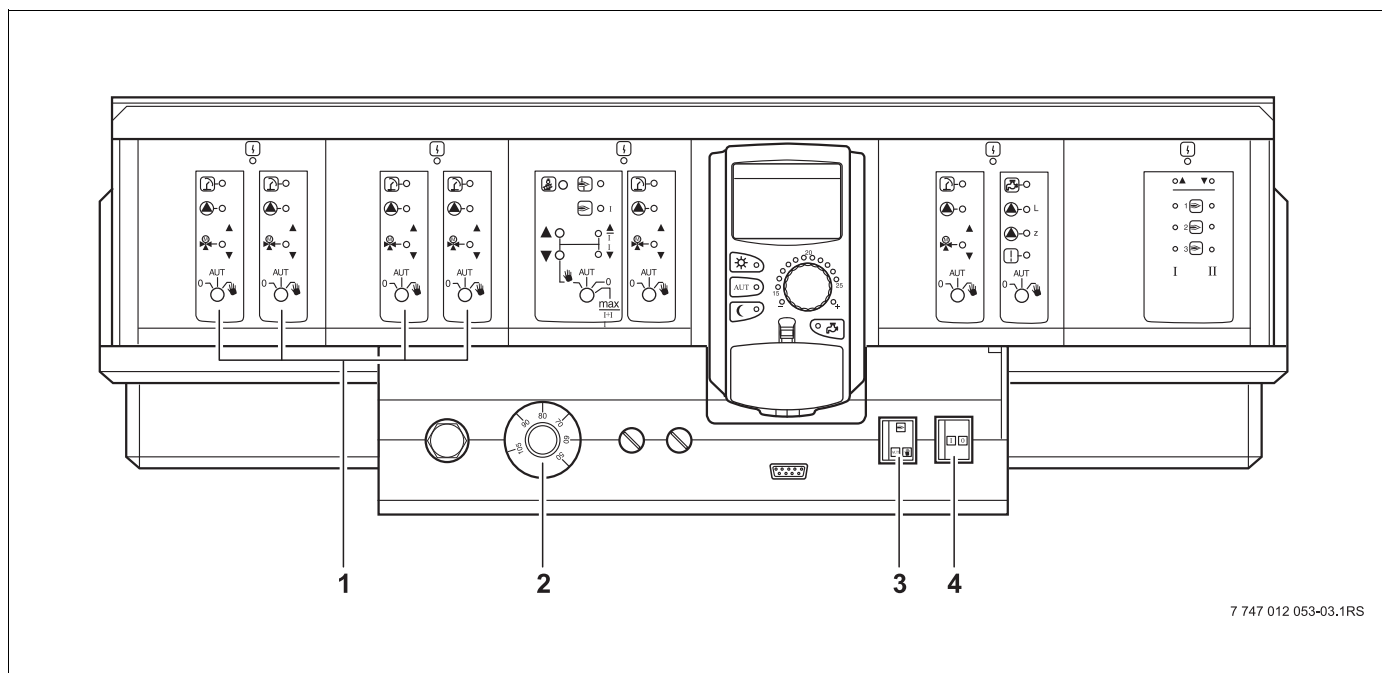
If the electronics fail, the control device can operate in emergency mode. In emergency mode, all pumps are left running and the mixers are volt-free. Mixers can be manually set. In such cases, notify your local heating contractor.

## 12.2 Heating with manual override

For emergency operation, switches are provided on the control unit and on the modules. In position  each pump is activated. The mixers stay at zero volts and should be manually adjusted.

Before making any adjustments for manual mode check the settings on the various modules for possibly incorrect settings.




If the control system indicates a fault you may temporarily run your heating system manually.









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Fig. 26 Heating with manual override

- 1 Module switch
- 2 Boiler water thermostat
- 3 Burner emergency operation switch
- 4 ON/OFF switch

- To safeguard DHW heating in the event of a fault, set the module switches (→ Fig. 26) to .
- Set the boiler water thermostat (→ Fig. 26) to 60 °C – 90 °C; if DHW heating fails to 60 °C.
- Set burner emergency switch to . Burner stage 1 will always be directly controlled. The setting for burner stage 2 must be made using the switch on the module.
- Set the control unit ON/OFF switch to .

Fault	Settings for emergency operation				
	ON/OFF switch on the Logamatic 4321	Switch Manual mode Boiler circuit ZM434 module	Switch DHW manual mode FM441 module	Boiler water thermostat on the Logamatic 4321	Manual mode switch, heating circuit module FM441/FM442
Central heating failed Heating circuits failed		AUT	AUT	60 – 90 °C	
DHW heating failed; heating circuits are supplied normally		AUT		60 °C	AUT
Boiler operation failed			AUT	90 °C	AUT

Tab. 5 Settings for emergency operation

Manually de-couple the heating circuit mixer and position towards "Open" or "Closed" (prevent re-engagement) until the required room temperature has been achieved. To prevent the DHW freezing inside the heating system, never close the heating circuit mixer.

In case of faults, immediately notify your local heating contractor who will guarantee a professional service. It would be helpful for your local heating contractor if you could provide precise details about the fault.

## 13 Setup report

Operating values	Input range	Factory settings	Setting
Program selection	Family Early morning Late evening Morning Afternoon Noon Single Seniors New	Family	
DHW	30 °C – 60 °C	60 °C	
Summer/winter time adjustment	10 °C – 30 °C constant summer constant winter	17 °C	
Day room temperature	11 °C – 30 °C	21 °C	
Night room temperature	2 °C – 29 °C	17 °C	
Holiday room temperature	10 °C – 30 °C	17 °C	
Thermal disinfection	Yes/No	No	

### Assignment of heating circuits

Your heating contractor will, as part of the commissioning process, assign the individual heating circuits of your heating system, e.g. heating circuit 1 = "l.h. side of the ground floor".

Heating circ.	Allocation
Heating circ. 1	
Heating circ. 2	
Heating circ. 3	
Heating circ. 4	
Heating circ. 5	
Heating circ. 6	
Heating circ. 7	
Heating circ. 8	

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